FULL LENGTH ROOF FRAMER

BY

A. F. J. RIECHERS

Full Length
Roof Framer

A series of tables giving the full length of all rafters for any span, for 48 different pitches.

Cuts and bevels for Common, Hip, Valley, Jack and Purlin rafters; also cuts and bevels for Gable and Cornice Mouldings, accompanying each of the 48 pitches with illustrations.

By

A. F. RIECHERS

Box 405
Palo Alto, California 94302

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PREFACE

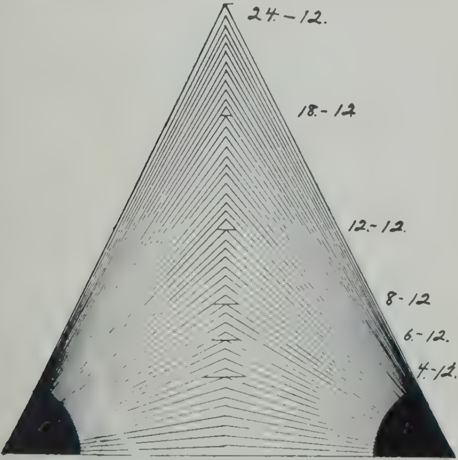
This book gives the ENTIRE *Length* of the Common, Hip, Valley and Jack Rafters for 48 different pitches.

The flattest pitch is a ½ inch rise to 12 inches of run. Pitches increase ½ inch of rise each time until they reach 24 inches of rise to 12 inches of run. There are 48 pitches, all told.

There are 2,400 different spans or widths of buildings given for *each* pitch. The smallest span is ¼ inch, and they increase ¼ inch each time until they reach a span of 50 feet. There is a different rafter length for each ¼ inch of span; therefore there are 2,400 Common and 2,400 Hip Rafter lengths, or 4,800 rafter lengths for each pitch; or 230,400 rafter lengths can be had for the 48 pitches.

By doubling or trebling the spans, the range of this book can be increased to meet the requirements of any building or bridge, even should the span run in the hundreds of feet.

The 144 Tables will give the ENTIRE length of the Common, Hip, Valley or Jack Rafter to ⅛ inch, for *positively* any span, be it in odd feet, odd inches, or odd fractions of an inch.



The cuts and bevels for all the roof work are given with each of the 48 pitches.

First determine the pitch and then the span of the rafters. Fig. 1 shows the pitch to be 8 feet rise for 12 feet run, or 8 inch rise for 12 inch run, or 8 and 12 pitch.

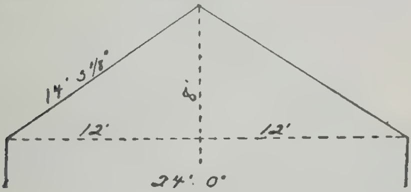


FIG. 1

The span is shown to be 24′ 0″.

Find the length of the rafters.

Turn to 8 and 12 pitch. Under the heading "Common Rafter—Span, Feet," locate 24′; opposite this is 14′ 5⅛″, which is the length of the Common Rafters.

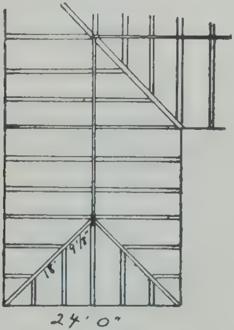


FIG. 2

Now suppose we wish a Hip or Valley Rafter for this roof as shown in Fig. 2. Under the heading "Hip or Valley Rafter—Span, Feet," locate 24′; opposite this is 18′ 9⅛″, which is the length of the Hip or Valley Rafter.

Now we will want some Jack Rafters to fit against the sides of the Hip and Valley Rafters.

Suppose we have them spaced 30″ apart. Under the heading "Jack Rafters—Spaced, Inches," locate 30"; opposite this is 3' 0", which is the length of the shortest one. The second one will be twice as long, or 6' 0". The third one will be thrice as long, or 9' 0", and so on.

SPANS OF ODD INCHES

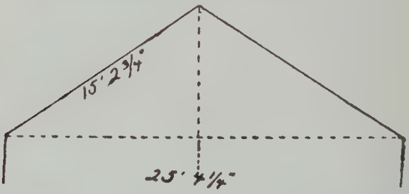


FIG. 3

Fig. 3 shows another 8 and 12 roof with an odd span of 25' 4¼". Find the Common Rafter length.

In the Span, Feet column......25' = 15' 0¼"
In the Span, Inch column....4¼" = 2½"
Total length of Common Rafter..15' 2¾"

Fig. 4 shows a Hip and Valley Rafter for the same roof. Find their length. In the Hip and Valley Rafter column:

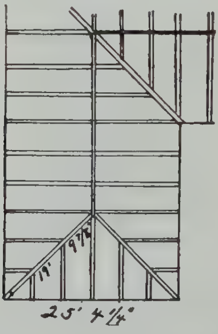


FIG. 4

Span, feet.....................25' = 19' 6½"
Span, inches ....4¼" = 3⅜"

Total length Hip & Valley Rafter..19' 9⅞"

Our Jack Rafters are spaced 32" this time.

In the "spaced inches" column 32" = 3' 2½".

The shortest Jack will then be 3′ 2½″ long, and each of the others will be 3′ 2½″ longer than the next as they advance in length.

WHEN RAFTERS OVERHANG BUILDING

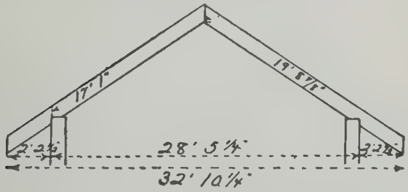


FIG. 5

An 8 and 12 overhang roof, which projects 2′ 2½″ (measuring out level) is shown in Fig. 5.

Overhang rafters must have a seat cut to set on buildings, as Fig 6 shows.

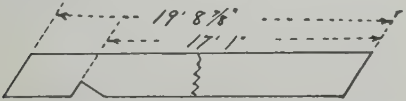


FIG. 6

Find location of plumb mark of the seat cut.

Span or width of building is 28′ 5¼″.

Using the tables as before....28′ = 16′ 9⅞″
5¼″ = 3⅛″

Location of plumb mark of seat cut. 17′ 1 ″

As shown in Fig. 6.

Find the entire length of Common Rafters.

By adding the two overhangs to width of building we have a rafter span of 32′ 10¼″, as Fig. 5.

Using the tables as before.....32′= 19′ 2¾″
10¼″ = 6⅛″

Total length of Common Rafters..19′ 8⅞″

Now find the location of seat cut and entire length of Hip or Valley Rafter for the same span roof as shown in Fig. 7.

Using the Hip and Valley table 28′ = 21′ 10⅝″
5¼″ = 4⅛″

Location of plumb mark of seat cut. 22′ 2¾″

As shown in Fig. 8.

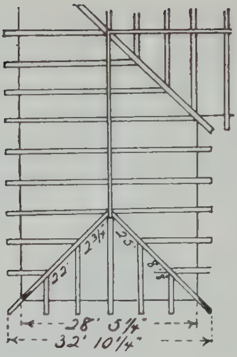


FIG. 7

Now the entire length.

Using table ....32′ = 25′ 0⅛′
10¼″ = 8′

Total length of Hip or Valley......25′ 8⅛″

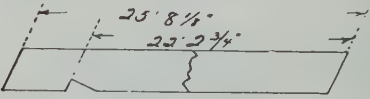


FIG. 8

Our Jack Rafters are spaced 24″ apart.

Using table for Jack Rafters, 24″ = 2′ 4⅞″; 2′ 4⅞″ is then the location of the plumb mark of the seat cut. Add to this the same projection of the Common Rafter overhang. Each Jack will be 2′ 4⅞″ longer than the next, as they advance in length.

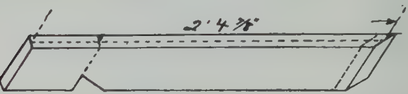


FIG. 9

Fig. 9 shows the correct way to measure a Jack Rafter. The dotted lines at the top cut show the allowance for half thickness of Hip Rafter. This allowance for half thickness of

Hip Rafter is only deducted for the pattern or first Jack, then the other Jacks are measured full length as they step up 2′ 4⅞″ each time after the pattern length.

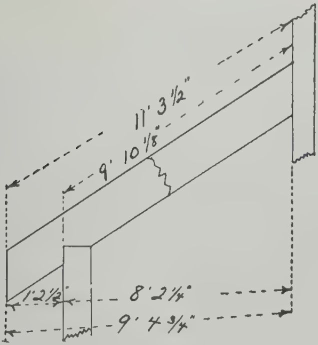


FIG. 10

To find the length of Common Rafter by its run or ½ span, as Fig. 10.

The first thing to do is to get the span, as if both sides of the roof were there. As in Fig. 10, double 8′ 2¼″ = 16′ 4½″; 16′ 4½″ is then the span to look for in the table.

16′ = 9′ 7⅜″
4½″ = 2¾″

Location of seat cut...............9′ 10⅛″

Now for the length of Rafter. Get the whole span by doubling 9′ 4¾″, which = 18′ 9½″ span.

In the table ....18′ = 10′ 9¾″
9½″ = 5¾″

Total length of Common Rafter...11′ 3½″

The Hip or Valley Rafter for this half roof is found by using the same span as the Common Rafter, as in all other cases.

The Length of Common, Hip or Valley, Lookout, or short finish Rafters which are fastened to the ends of the rough Rafters, is found by the same method, as above. Double the run and get the span, then proceed as for any other roof.

CUTS AND BEVELS FOR THE RAFTERS SO FAR DESCRIBED

So far we have used 8 and 12 pitch only. Not because it is easier to use by this book, but because it is the standard pitch.

It makes no difference whether you have ever framed, say a 17½-12 pitch roof or not, you can frame it as easy as any pitch you are most familiar with, by the aid of this book.

Looking back to Figs. 1 and 2, we have a Gable and Hip Roof of 8 and 12 pitch.

Turning to Table 8-12, and under the heading "Cuts for Steel Square," "The first figure is always the cut."

COMMON RAFTER

Plumb 8-12, see Figs. 11 and 12.
Level 12-8, see Fig. 12.

HIP OR VALLEY RAFTER

Plumb 8-17, see Fig. 13.
Level 17-8, see Fig. 13.
Side 9⅜-8½, see Figs. 14 and 15.
Backing 8-18¾, see Figs. 16 and 17.

JACK RAFTERS

Plumb 8-12, see Fig. 18.
Level 12-8, see Fig. 18.
Side 14⅜-12, see Figs 19 and 20.

The dotted line in Fig. 11, shows allowance for half thickness of Ridge.

The dotted line in Fig 15 shows allowance for half thickness of Ridge.

The dotted line in Fig. 20 shows allowance for half thickness of Hip.

PURLIN RAFTER OR ROOF SHEATHING

Plumb 8-14⅜, see Fig. 21.
Cross 12-14⅜, see Fig. 22.

VALLEY SHINGLES

Cross 12-14⅜, see Fig. 23.

MITRE-BOX CUTS FOR GABLE MOULDS

Plumb 8-12, see Figs. 24 and 25.
Mitre 14⅜-12, see Figs. 24 and 25.

BISECTION OF

8-12 = 7¼-24, see Fig. 26.

Mitre-box Cuts for Cornice Mouldings intersecting at Valley or Hip, Fig. 27. Always

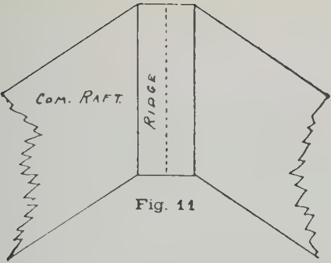


Fig. 11

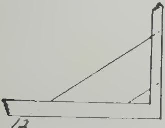


Fig. 12

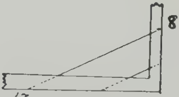


Fig 13

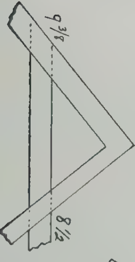


Fig. 14

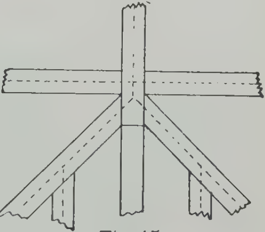


Fig. 15

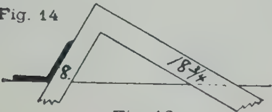


Fig. 16

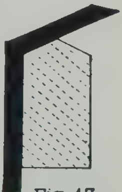


Fig. 17

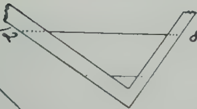


Fig. 18

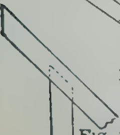


Fig. 20

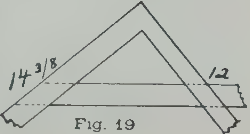


Fig. 19

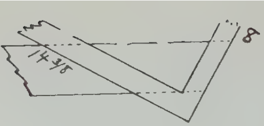


Fig 21

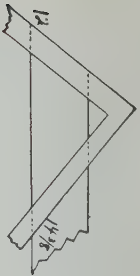
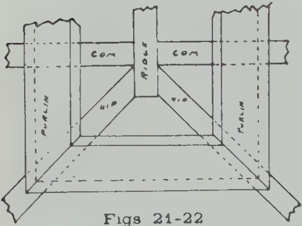


Fig. 22



Figs 21-22

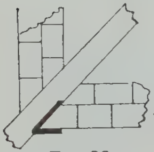


Fig. 23

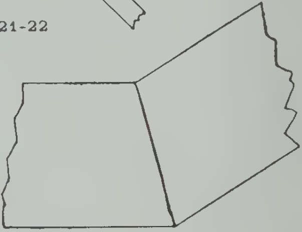
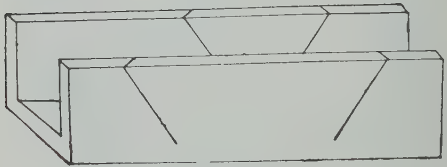


Fig 26



Figs. 24-25

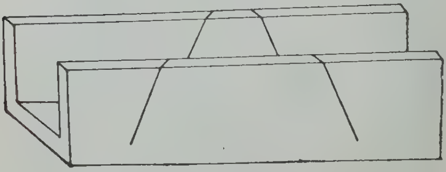


Fig. 27

use the same cuts as for the Purlin Rafter or Roof Sheathing.

When Hip Rafters are Backed or Beveled on Top Edge they are marked and cut to the length as given by the tables. If they overhang, they must have a seat cut.

The plumb marks of the Common and Hip Rafter seat cut are of the same height, as Figs. 28 and 29.

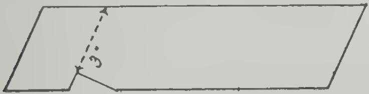


FIG. 28

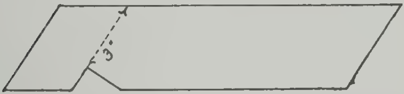


FIG. 29

The amount of Backing to be beveled off the top edge depends on the thickness and pitch of the Hip Rafter.

The quickest and easiest way to mark the backing is as follows (Fig. 30):

Suppose the pitch is 8-12, the thickness of Hip Rafter 2".

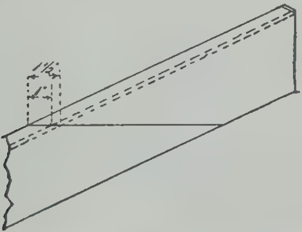


FIG. 30

Draw a level mark (17-8) anywhere on the side of the rafter. Measure on this level mark, half the rafter's thickness, or 1" in this case. The first dotted line shows the backing mark. For a Hip Rafter 3" thick measure 1½" on the level mark, which meets the second backing mark, and so on for a Hip Rafter of any thickness.

After the rafter has been completely laid out, mark back the half thickness of Ridge.

When Hip Rafters are not Backed (not beveled on top edge) they are marked and cut to the length given by the tables, and are the same as the Backed Hip Rafter, with but one exception, as follows:

When a Hip Rafter is to be Backed (top edge beveled) the plumb marks of the Common and Hip Rafter seat cuts are the same, as shown in Figs. 31 and 32.

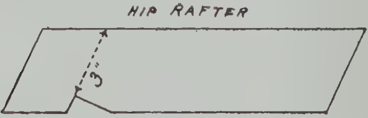


FIG. 31

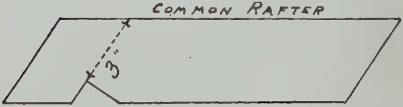


FIG. 32

When a Hip Rafter is not to be Backed (top edge left square) the plumb mark of the Common and Hip Rafter seat cut are not the same. The seat cut of the Hip Rafter is cut in deeper to allow the top corner edges to come down to the line of the Common and Jack Rafters. In this case the plumb mark of the Common Rafter seat cut is 3″ and the plumb mark of the Hip Rafter seat cut is 2½″, and they both line up with each other to a level line on top.

The extra amount to be cut out of the seat cut is found as follows:

The pitch is 8-12. The thickness of Hip Rafter is 2″. The rafter is not going to be backed or the top edge is to remain as it is, or square.

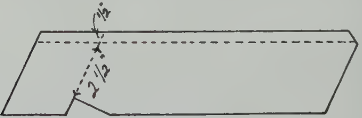


FIG. 33

We will use Fig. 33 for an example. First put a backing mark along the top edge, over the seat cut. It will cut off ½″ off the plumb mark for this rafter. This will leave the plumb mark 2½″ high at the seat cut. The way the rafter looks now, it is ready to have the top corner beveled off. But instead of beveling the top corners off, which are sticking up ½″ too high, we will cut ½″ out of the seat cut,

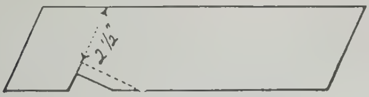


FIG. 34

as shown in Fig. 34. This will drop the corner edges down to a line with the Common and Jack Rafters and save the unnecessary work of chopping off the top edge of the Hip Rafter.

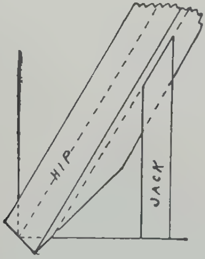


FIG. 35

Fig. 35 shows the proper position of Hip Rafter before the ½″ allowance for backing has been made. It can be seen that the top corner edges of the Hip are too high.

Fig. 36 shows this same rafter after the ½″ allowance for backing has been removed from the level seat cut. The rafter now lines up correctly with the building line and the top corner edges line up with the Common and Jack Rafters.

Fig. 37 shows the proper way to measure and mark the Hip Rafter. If the building span is 17′ the location of the seat cut is 13′ 3½″, measuring along the center of the top edge, as shown by dotted line. If the Common Rafter overhang is 2′, then the total span of Common Rafters is 21′ and the Hip Rafter is 16′ 5″ long.

If the Hip is not to be Backed, mark the plumb mark of the seat cut the same height as for the Common Rafter. Then mark the allowance for backing as shown by the dotted level mark.

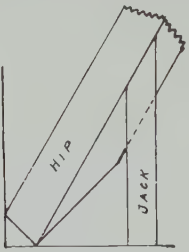


FIG. 36

Now mark the half thickness of ridge allowance shown by the dotted line and the

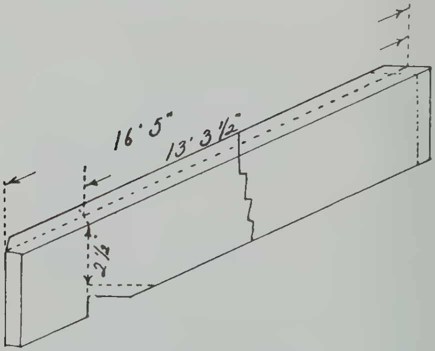


FIG. 37

rafter is ready to cut, and it will fit correctly when placed in position.

Use this Hip for a pattern and mark the others from it. Cut them in pairs.

VALLEY RAFTER

The length and bevels of the Valley Rafter are always the same as the Hip Rafter. Fig. 38 shows a Valley Rafter for the same roof as the Hip Rafter shown in Fig. 37.

Difference of an overhang Hip and Valley. A Hip Rafter is notched out deeper in the level mark of the seat cut to allow for backing. ***The plumb mark is never moved.***

A Valley Rafter is never notched out deeper in the level mark of the seat cut to allow for backing (Fig. 39).

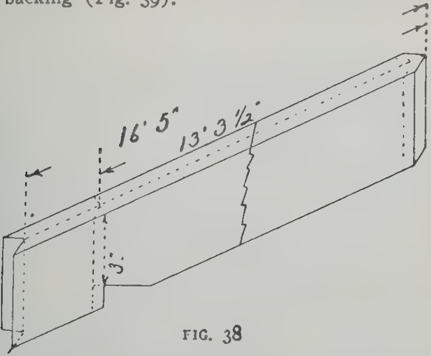


FIG. 38

The plumb mark is advanced to clear the crotch of the two building lines, as shown in

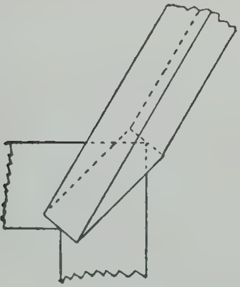


FIG. 39

Fig. 40. The same cut that fits the ridge will give the bevel for the crotch.

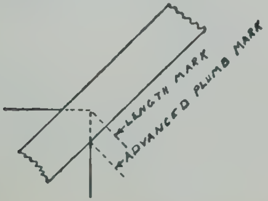


FIG. 40

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1
2..		2
3..		3
4..		4
5..		5
6..		6
7..		7
8..		8
9..		9
10..		10
11..		11
12..	1	0
13..		1
14..		2
15..		3
16..		4
17..		5
18..		6
19..		7
20..		8
21..		9
22..		10
23..		11
24..	2	0
25..		1
26..		2
27..		3
28..		4
29..		5
30..		6
31..		7
32..		8
33..		9
34..		10
35..		11
36..	3	0
37..		1
38..		2
39..		3
40..		4
41..		5
42..		6
43..		7
44..		8
45..		9
46..		10
47..		11
48..	4	0

½ & 12 — 2½°

EXPLANATION

Common Rafter

Width of building............. 40′6″
Find length of Common Rafter.
Answer:
Under **Span, ft.** find 40′ = 20′ 0¼″
" " **in.** " 6″ = 3″

Total length Common Rft. 20′ 3¼″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 40′6″, Hip rafter is 28′7¾″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 32″ apart are 2′8″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb ½- 12
Level. 12 - ½

Hip Rafter
Plumb ½- 17
Level. 17 - ½
Side.. 8½- 8½
Backing ½- 17

Set bevel to last named.

Jack Rafter
Plumb ½- 12
Level. 12 - ½
Side.. 12 - 12

Purlin Rafter Roof Sheathing
Plumb ½- 12
Cross. 12 - 12

Valley Shingles
Cross. 12 - 12

Set bevel on butt end

Mitre-Box Cuts for Gable Moulds
Plumb ½- 12
Mitre. 12 - 12

Bisection of
½- 12 = ½- 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		6	¼	⅛
2	1	0	½	¼
3	1	6	¾	⅜
4	2	0	1	½
5	2	6	¼	⅝
6	3	0	½	¾
7	3	6	¾	⅞
8	4	0	2	1
9	4	6	¼	⅛
10	5	0	½	¼
11	5	6	¾	⅜
12	6	0	3	½
13	6	6⅛	¼	⅝
14	7	6⅛	½	¾
15	7	6⅛	¾	⅞
16	8	0⅛	4	2
17	8	6⅛	¼	⅛
18	9	0⅛	½	¼
19	9	6⅛	¾	⅜
20	10	0⅛	5	½
21	10	6⅛	¼	⅝
22	11	0⅛	½	¾
23	11	6⅛	¾	⅞
24	12	0⅛	6	3
25	12	6⅛	¼	⅛
26	13	0⅛	½	¼
27	13	6⅛	¾	⅜
28	14	0⅛	7	½
29	14	6⅛	¼	⅝
30	15	0⅛	½	¾
31	15	6⅛	¾	⅞
32	16	0⅛	8	4
33	16	6⅛	¼	⅛
34	17	0⅛	½	¼
35	17	6⅛	¾	⅜
36	18	0⅛	9	½
37	18	6⅛	¼	⅝
38	19	0¼	½	¾
39	19	6¼	¾	⅞
40	20	0¼	10	5
41	20	6¼	¼	⅛
42	21	0¼	½	¼
43	21	6¼	¾	⅜
44	22	0¼	11	½
45	22	6¼	¼	⅝
46	23	0¼	½	¾
47	23	6¼	¾	⅞
48	24	0¼	12	6
49	24	6¼		
50	25	0¼		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		8½	¼	⅛
2	1	5	½	⅜
3	2	1½	¾	½
4	2	10	1	¾
5	3	6½	¼	⅞
6	4	2⅞	½	1
7	4	11⅜	¾	¼
8	5	7⅞	2	⅜
9	6	4⅜	¼	⅝
10	7	0⅞	½	¾
11	7	9⅜	¾	2
12	8	5⅞	3	⅛
13	9	2⅜	¼	¼
14	9	10⅞	½	½
15	10	7⅜	¾	⅝
16	11	3⅞	4	⅞
17	12	0⅜	¼	3
18	12	8¼	½	⅛
19	13	5¼	¾	⅜
20	14	1¾	5	½
21	14	10¼	¼	¾
22	15	6¾	½	⅞
23	16	3¼	¾	4⅛
24	16	11¾	6	¼
25	17	8¼	¼	⅜
26	18	4¾	½	⅝
27	19	1¼	¾	¾
28	19	9¾	7	5
29	20	6⅛	¼	⅛
30	21	2⅝	½	¼
31	21	11⅛	¾	½
32	22	7⅝	8	⅝
33	23	4⅛	¼	⅞
34	24	0⅝	½	6
35	24	9⅛	¾	¼
36	25	5⅝	9	⅜
37	26	2⅛	¼	½
38	26	10⅝	½	¾
39	27	7⅛	¾	⅞
40	28	3½	10	7⅛
41	29	0	¼	¼
42	29	8½	½	⅜
43	30	5	¾	⅝
44	31	1½	11	¾
45	31	10	¼	8
46	32	6½	½	⅛
47	33	3	¾	¼
48	33	11½	12	½
49	34	8		
50	35	4½		

1 & 12 — 4½°

JACK RAFTER

Spaced In.	Length Ft.	Length In.
1..		1
2..		2
3..		3
4..		4
5..		5
6..		6
7..		7
8..		8
9..		9
10..		10
11..		11
12..	1	0
13..		1
14..		2
15..		3
16..		4
17..		5
18..		6⅛
19..		7⅛
20..		8⅛
21..		9⅛
22..		10⅛
23..		11⅛
24..	2	0⅛
25..		1⅛
26..		2⅛
27..		3⅛
28..		4⅛
29..		5⅛
30..		6⅛
31..		7⅛
32..		8⅛
33..		9⅛
34..		10⅛
35..		11⅛
36..	3	0⅛
37..		1⅛
38..		2⅛
39..		3⅛
40..		4⅛
41..		5⅛
42..		6⅛
43..		7⅛
44..		8⅛
45..		9⅛
46..		10⅛
47..		11⅛
48..	4	0⅛

EXPLANATION

Common Rafter

Width of building............24′4″
Find length of Common Rafter.
Answer:
Under **Span, ft.** find 24′ = 12′ 0½
" " **in.** " 4″ = 2″

Total length Common Rft. 12′ 2½″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 24′4″, Hip rafter is 17′2⅞″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 29″ apart are 2′5⅛″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 1 - 12
Level. 12 - 1

Hip Rafter
Plumb 1 - 17
Level. 17 - 1
Side.. 8½ - 8½
Backing 1 - 17

Set bevel to last named.

Jack Rafter
Plumb 1 - 12
Level. 12 - 1
Side.. 12 - 12

Purlin Rafter Roof Sheathing
Plumb 1 - 12
Cross. 12 - 12

Valley Shingles
Cross. 12 - 12

Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 1 - 12
Mitre. 12 - 12

Bisection of
1- 12 = 1- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		6	¼	⅛
2	1	0	½	¼
3	1	6⅛	¾	⅜
4	2	0⅛	1	½
5	2	6⅛	¼	⅝
6	3	0⅛	½	¾
7	3	6⅛	¾	⅞
8	4	0⅛	2	1
9	4	6⅛	¼	⅛
10	5	0¼	½	¼
11	5	6¼	¾	⅜
12	6	0¼	3	½
13	6	6¼	¼	⅝
14	7	0¼	½	¾
15	7	6¼	¾	⅞
16	8	0⅜	4	2
17	8	6⅜	¼	⅛
18	9	0⅜	½	¼
19	9	6⅜	¾	⅜
20	10	0⅜	5	½
21	10	6⅜	¼	⅝
22	11	0½	½	¾
23	11	6½	¾	⅞
24	12	0½	6	3
25	12	6½	¼	⅛
26	13	0½	½	¼
27	13	6½	¾	⅜
28	14	0⅝	7	½
29	14	6⅝	¼	⅝
30	15	0⅝	½	¾
31	15	6⅝	¾	⅞
32	16	0⅝	8	4
33	16	6⅝	¼	⅛
34	17	0⅝	½	¼
35	17	6¾	¾	⅜
36	18	0¾	9	½
37	18	6¾	¼	⅝
38	19	0¾	½	¾
39	19	6¾	¾	⅞
40	20	0⅞	10	5
41	20	6⅞	¼	⅛
42	21	0⅞	½	¼
43	21	6⅞	¾	⅜
44	22	0⅞	11	½
45	22	6⅞	¼	⅝
46	23	1	½	¾
47	23	7	¾	⅞
48	24	1	12	6
49	24	7		
50	25	1		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		8½	¼	⅛
2	1	5	½	⅜
3	2	1½	¾	½
4	2	10	1	¾
5	3	6½	¼	⅞
6	4	3	½	1⅛
7	4	11½	¾	¼
8	5	8	2	⅜
9	6	4½	¼	⅝
10	7	1	½	¾
11	7	9½	¾	2
12	8	6	3	⅛
13	9	2½	¼	¼
14	9	11	½	½
15	10	7½	¾	⅝
16	11	4	4	⅞
17	12	0½	¼	3
18	12	9	½	⅛
19	13	5½	¾	⅜
20	14	2	5	½
21	14	10½	¼	¾
22	15	7	½	⅞
23	16	3½	¾	4⅛
24	17	0	6	¼
25	17	8½	¼	⅜
26	18	5	½	⅝
27	19	1½	¾	¾
28	19	10	7	5
29	20	6½	¼	⅛
30	21	3	½	¼
31	21	11½	¾	½
32	22	8	8	⅝
33	23	4½	¼	⅞
34	24	1	½	6
35	24	9½	¾	¼
36	25	6	9	⅜
37	26	2½	¼	½
38	26	11	½	¾
39	27	7½	¾	⅞
40	28	4	10	7⅛
41	29	0½	¼	¼
42	29	9	½	⅜
43	30	5½	¾	⅝
44	31	2	11	¾
45	31	10½	¼	8
46	32	7	½	⅛
47	33	3½	¾	⅜
48	34	0	12	½
49	34	8½		
50	35	5		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1
2..		2
3..		3
4 .		4
5..		5
6..		6
7..		7
8..		8
9..		9⅛
10..		10⅛
11..		11⅛
12..	1	0⅛
13..		1⅛
14..		2⅛
15..		3⅛
16..		4⅛
17..		5⅛
18..		6⅛
19..		7⅛
20..		8⅛
21..		9⅛
22..		10⅛
23..		11⅛
24..	2	0⅛
25..		1¼
26..		2¼
27.		3¼
28 .		4¼
29..		5¼
30..		6¼
31..		7¼
32..		8¼
33..		9¼
34..		10¼
35..		11¼
36..	3	0¼
37..		1¼
38..		2¼
39..		3¼
40..		4¼
41..		5⅜
42..		6⅜
43..		7⅜
44..		8⅜
45..		9⅜
46..		10⅜
47..		11⅜
48..	4	0⅜

1½ & 12--7°

EXPLANATION

Common Rafter

Width of building...........28′8¼″
Find length of Common Rafter.
Answer:
Under Span, ft. find 28′ = 14′ 1¼″
" " in. " 8¼″ = 4⅛″

Total length Common Rft. 14′ 5⅜″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 28′8¼″, Hip rafter is 20′4⅜″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 30″ apart are 2′6¼″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 1½- 12
Level. 12 - 1½

Hip Rafter
Plumb 1½- 17
Level. 17 - 1½
Side.. 8½- 8½
Backing 1½- 17
Set bevel to last named.

Jack Rafter
Plumb 1½- 12
Level. 12 - 1½
Side.. 12⅛- 12

Purlin Rafter Roof Sheathing
Plumb 1½- 12⅛
Cross. 12 - 12⅛

Valley Shingles
Cross. 12 - 12⅛
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 1½- 12
Mitre. 12⅛- 12

Bisection of
1½- 12=1½- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		6	¼	⅛
2	1	0⅛	½	¼
3	1	6⅛	¾	⅜
4	2	0⅛	1	½
5	2	6¼	¼	⅝
6	3	0¼	½	¾
7	3	6⅜	¾	⅞
8	4	0⅜	2	1
9	4	6⅜	¼	⅛
10	5	0½	½	¼
11	5	6½	¾	⅜
12	6	0½	3	½
13	6	6⅝	¼	⅝
14	7	0⅝	½	¾
15	7	6¾	¾	⅞
16	8	0¾	4	2
17	8	6¾	¼	⅛
18	9	0⅞	½	¼
19	9	6⅞	¾	⅜
20	10	0⅞	5	½
21	10	7	¼	⅝
22	11	1	½	¾
23	11	7⅛	¾	⅞
24	12	1⅛	6	3
25	12	7⅛	¼	⅛
26	13	1¼	½	¼
27	13	7¼	¾	⅜
28	14	1¼	7	½
29	14	7⅜	¼	⅝
30	15	1⅜	½	¾
31	15	7½	¾	⅞
32	16	1½	8	4
33	16	7½	¼	⅛
34	17	1⅝	½	¼
35	17	7⅝	¾	⅜
36	18	1⅝	9	½
37	18	7¾	¼	⅝
38	19	1¾	½	¾
39	19	7⅞	¾	⅞
40	20	1⅞	10	5
41	20	7⅞	¼	⅛
42	21	2	½	¼
43	21	8	¾	⅜
44	22	2	11	½
45	22	8⅛	¼	⅝
46	23	2⅛	½	¾
47	23	8⅛	¾	⅞
48	24	2¼	12	6
49	24	8¼		
50	25	2⅜		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		8½	¼	⅛
2	1	5	½	⅜
3	2	1½	¾	½
4	2	10⅛	1	¾
5	3	6⅝	¼	⅞
6	4	3⅛	½	1⅛
7	4	11⅝	¾	¼
8	5	8⅛	2	⅜
9	6	4⅝	¼	⅝
10	7	1⅛	½	¾
11	7	9¾	¾	2
12	8	6¼	3	⅛
13	9	2¾	¼	¼
14	9	11¼	½	½
15	10	7¾	¾	⅝
16	11	4¼	4	⅞
17	12	0¾	¼	3
18	12	9⅜	½	¼
19	13	5⅞	¾	⅜
20	14	2⅜	5	½
21	14	10⅞	¼	¾
22	15	7⅜	½	⅞
23	16	3⅞	¾	4⅛
24	17	0⅜	6	¼
25	17	9	¼	⅜
26	18	5½	½	⅝
27	19	2	¾	¾
28	19	10½	7	5
29	20	7	¼	⅛
30	21	3½	½	⅜
31	22	0	¾	½
32	22	8⅝	8	⅝
33	23	5⅛	¼	⅞
34	24	1⅝	½	6
35	24	10⅛	¾	¼
36	25	6⅝	9	⅜
37	26	3⅛	¼	⅝
38	26	11⅝	½	¾
39	27	8¼	¾	⅞
40	28	4¾	10	7⅛
41	29	1¼	¼	¼
42	29	9¾	½	½
43	30	6¼	¾	⅝
44	31	2¾	11	¾
45	31	11¼	¼	8
46	32	7⅞	½	⅛
47	33	4⅜	¾	⅜
48	34	0⅞	12	½
49	34	9⅜		
50	35	5⅞		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1		1
2		2
3		3
4		4
5		5⅛
6		6⅛
7		7⅛
8		8⅛
9		9⅛
10		10⅛
11		11⅛
12	1	0⅛
13		1⅛
14		2¼
15		3¼
16		4¼
17		5¼
18		6¼
19		7¼
20		8¼
21		9¼
22		10¼
23		11⅜
24	2	0⅜
25		1⅜
26		2⅜
27		3⅜
28		4⅜
29		5⅜
30		6⅜
31		7⅜
32		8½
33		9½
34		10½
35		11½
36	3	0½
37		1½
38		2½
39		3½
40		4½
41		5⅝
42		6⅝
43		7⅝
44		8⅝
45		9⅝
46		10⅝
47		11⅝
48	4	0⅝

2 & 12 — 9½°

EXPLANATION

Common Rafter

Width of building...........36'9¾"
Find length of Common Rafter.
Answer:
Under **Span, ft.** find 36' = 18' 3"
" " in. " 9¾" = 5"

Total length Common Rft. 18' 8"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 36'9¾", Hip rafter is 26'2⅝" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 33" apart are 2'9½" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 2 - 12
Level. 12 - 2

Hip Rafter

Plumb 2 - 17
Level. 17 - 2
Side.. 8½- 8½
Backing 2 - 17⅛
Set bevel to last named.

Jack Rafter

Plumb 2 - 12
Level. 12 - 2
Side.. 12⅛- 12

Purlin Rafter
Roof Sheathing

Plumb 2 - 12⅛
Cross. 12 - 12⅛

Valley Shingles

Cross. 12 - 12⅛
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 2 - 12
Mitre. 12⅛- 12

Bisection of
2- 12=1⅞- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		6⅛	¼	⅛
2	1	0⅛	½	¼
3	1	6¼	¾	⅜
4	2	0⅜	**1**	½
5	2	6⅜	¼	⅝
6	3	0½	½	¾
7	3	6⅝	¾	⅞
8	4	0⅝	**2**	**1**
9	4	6¾	¼	⅛
10	5	0⅞	½	¼
11	5	6⅞	¾	⅜
12	6	1	**3**	½
13	6	7⅛	¼	⅝
14	7	1⅛	½	¾
15	7	7¼	¾	⅞
16	8	1⅜	**4**	**2**
17	8	7⅜	¼	⅛
18	9	1½	½	¼
19	9	7⅝	¾	⅜
20	10	1⅝	**5**	½
21	10	7¾	¼	⅝
22	11	1⅞	½	¾
23	11	7⅞	¾	⅞
24	12	2	**6**	**3**
25	12	8⅛	¼	⅛
26	13	2⅛	½	¼
27	13	8¼	¾	⅜
28	14	2⅜	**7**	½
29	14	8⅜	¼	⅝
30	15	2½	½	¾
31	15	8⅝	¾	⅞
32	16	2⅝	**8**	**4**
33	16	8¾	¼	⅛
34	17	2⅞	½	¼
35	17	8⅞	¾	½
36	18	3	**9**	⅝
37	18	9⅛	¼	¾
38	19	3⅛	½	⅞
39	19	9¼	¾	**5**
40	20	3⅜	**10**	⅛
41	20	9⅜	¼	¼
42	21	3½	½	⅜
43	21	9½	¾	½
44	22	3⅝	**11**	⅝
45	22	9¾	¼	¾
46	23	3¾	½	⅞
47	23	9⅞	¾	**6**
48	24	4	**12**	⅛
49	24	10		
50	25	4⅛		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		8½	¼	⅛
2	1	5⅛	½	⅜
3	2	1⅝	¾	½
4	2	10⅛	**1**	¾
5	3	6¾	¼	⅞
6	4	3¼	½	1⅛
7	4	11¾	¾	¼
8	5	8⅜	**2**	⅜
9	6	4⅞	¼	⅝
10	7	1½	½	¾
11	7	10	¾	**2**
12	8	6½	**3**	⅛
13	9	3⅛	¼	⅜
14	9	11⅝	½	½
15	10	8⅛	¾	⅝
16	11	4¾	**4**	⅞
17	12	1¼	¼	**3**
18	12	9¾	½	¼
19	13	6⅜	¾	⅜
20	14	2⅞	**5**	½
21	14	11⅜	¼	¾
22	15	8	½	⅞
23	16	4½	¾	**4**⅛
24	17	1	**6**	¼
25	17	9⅝	¼	½
26	18	6⅛	½	⅝
27	19	2¾	¾	¾
28	19	11¼	**7**	**5**
29	20	7¾	¼	⅛
30	21	4⅜	½	⅜
31	22	0⅞	¾	½
32	22	9⅜	**8**	¾
33	23	6	¼	⅞
34	24	2½	½	**6**
35	24	11	¾	¼
36	25	7⅝	**9**	⅜
37	26	4⅛	¼	⅝
38	27	0⅝	½	¾
39	27	9¼	¾	**7**
40	28	5¾	**10**	⅛
41	29	2¼	¼	¼
42	29	10⅞	½	½
43	30	7⅜	¾	⅝
44	31	3⅞	**11**	⅞
45	32	0½	¼	**8**
46	32	9	½	¼
47	33	5⅝	¾	⅜
48	34	2⅛	**12**	½
49	34	10⅝		
50	35	7¼		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1
2..		2
3..		3⅛
4..		4⅛
5..		5⅛
6..		6⅛
7..		7⅛
8..		8⅛
9..		9¼
10..		10¼
11..		11¼
12..	1	0¼
13..		1¼
14..		2¼
15..		3⅜
16..		4⅜
17..		5⅜
18..		6⅜
19..		7⅜
20..		8⅜
21..		9½
22..		10½
23..		11½
24..	2	0½
25..		1½
26..		2½
27..		3⅝
28..		4⅝
29..		5⅝
30..		6⅝
31..		7⅝
32..		8⅝
33..		9¾
34..		10¾
35..		11¾
36	3..	0¾
37..		1¾
38..		2⅞
39..		3⅞
40..		4⅞
41..		5⅞
42..		6⅞
43..		7⅞
44..		9
45..		10
46..		11
47..	4	0
48..		1

2½ & 12 — 11¾°

EXPLANATION

Common Rafter

Width of building...........32′7¾″

Find length of Common Rafter.

Answer:

Under **Span, ft.** find 32′ = 16′ 4⅛″

" " **in.** " 7¾″ = 4″

Total length Common Rft. 16′ 8⅛″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 32′7¾″, Hip rafter is 23′1″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 40″ apart are 3′4⅞″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut

Common Rafter

Plumb 2½- 12

Level. 12 - 2½

Hip Rafter

Plumb 2½- 17

Level. 17 - 2½

Side.. 8⅝- 8½

Backing 2½- 17⅛

Set bevel to last named.

Jack Rafter

Plumb 2½- 12

Level. 12 - 2½

Side.. 12¼- 12

Purlin Rafter Roof Sheathing

Plumb 2½- 12¼

Cross. 12 - 12¼

Valley Shingles

Cross. 12 - 12¼

Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 2½- 12

Mitre. 12¼- 12

Bisection of

2½- 12-2⅜ - 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		6⅛	¼	⅛
2	1	0¼	½	¼
3	1	6⅜	¾	⅜
4	2	0½	1	½
5	2	6⅝	¼	⅝
6	3	0¾	½	¾
7	3	6⅞	¾	⅞
8	4	1	2	1
9	4	7⅛	¼	⅛
10	5	1¼	½	¼
11	5	7⅜	¾	⅜
12	6	1½	3	½
13	6	7⅝	¼	⅝
14	7	1¾	½	¾
15	7	7⅞	¾	⅞
16	8	2	4	2
17	8	8¼	¼	⅛
18	9	2⅜	½	¼
19	9	8½	¾	⅜
20	10	2⅝	5	½
21	10	8¾	¼	⅝
22	11	2⅞	½	¾
23	11	9	¾	⅞
24	12	3⅛	6	3
25	12	9¼	¼	¼
26	13	3⅜	½	⅜
27	13	9½	¾	½
28	14	3⅝	7	⅝
29	14	9¾	¼	¾
30	15	3⅞	½	⅞
31	15	10	¾	4
32	16	4⅛	8	⅛
33	16	10¼	¼	¼
34	17	4⅜	½	⅜
35	17	10½	¾	½
36	18	4⅝	9	⅝
37	18	10¾	¼	¾
38	19	4⅞	½	⅞
39	19	11	¾	5
40	20	5⅛	10	⅛
41	20	11¼	¼	¼
42	21	5⅜	½	⅜
43	21	11½	¾	½
44	22	5⅝	11	⅝
45	22	11¾	¼	¾
46	23	5⅞	½	⅞
47	24	0	¾	6
48	24	6⅛	12	⅛
49	25	0¼		
50	25	6½		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		8⅝	¼	⅛
2	1	5⅛	½	⅜
3	2	1¾	¾	½
4	2	10¼	1	¾
5	3	6⅞	¼	⅞
6	4	3½	½	1⅛
7	5	0	¾	¼
8	5	8⅝	2	⅜
9	6	5¼	¼	⅝
10	7	1¾	½	¾
11	7	10⅜	¾	2
12	8	6⅞	3	⅛
13	9	3½	¼	⅜
14	10	0⅛	½	½
15	10	8⅝	¾	⅝
16	11	5¼	4	⅞
17	12	1¾	¼	3
18	12	10⅜	½	¼
19	13	7	¾	⅜
20	14	3½	5	⅝
21	15	0⅛	¼	¾
22	15	8¾	½	⅞
23	16	5¼	¾	4⅛
24	17	1⅞	6	¼
25	17	10⅜	¼	½
26	18	7	½	⅝
27	19	3⅝	¾	⅞
28	20	0⅛	7	5
29	20	8¾	¼	⅛
30	21	5¼	½	⅜
31	22	1⅞	¾	½
32	22	10½	8	¾
33	23	7	¼	⅞
34	24	3⅝	½	6⅛
35	25	0¼	¾	¼
36	25	8¾	9	⅜
37	26	5⅜	¼	⅝
38	27	1⅞	½	¾
39	27	10½	¾	7
40	28	7⅛	10	⅛
41	29	3⅜	¼	⅜
42	30	0¼	½	½
43	30	8¾	¾	⅝
44	31	5⅜	11	⅞
45	32	2	¼	8
46	32	10½	½	¼
47	33	7⅛	¾	⅜
48	34	3⅝	12	⅝
49	35	0¼		
50	35	8⅞		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1
2..		2
3..		3⅛
4..		4⅛
5..		5⅛
6..		6⅛
7..		7¼
8..		8¼
9..		9¼
10..		10¼
11..		11⅜
12..	1	0⅜
13..		1⅜
14..		2⅜
15..		3½
16..		4½
17..		5½
18..		6½
19..		7⅝
20..		8⅝
21..		9⅝
22..		10⅝
23..		11¾
24..	2	0¾
25..		1¾
26..		2¾
27..		3⅞
28..		4⅞
29..		5⅞
30..		6⅞
31..		8
32..		9
33..		10
34..		11
35	3..	0⅛
36..		1⅛
37..		2⅛
38..		3⅛
39..		4¼
40..		5¼
41..		6¼
42..		7¼
43..		8⅜
44..		9⅜
45 .		10⅜
46..		11⅜
47..	4	0½
48..		1½

3 & 12 — 14°

EXPLANATION

Common Rafter

Width of building...........38′8¾″
Find length of Common Rafter.

Answer:

Under **Span**, ft. find 38′ = 19′ 7″
" " in. " 8¾″ = 4½″

Total length Common Rft. 19′11½″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 38′8¾″, Hip rafter is 27′9¾″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 38″ apart are 3′3⅛″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 3 - 12
Level. 12 - 3

Hip Rafter

Plumb 3 - 17
Level. 17 - 3
Side.. 8⅝ - 8½
Backing 3 - 17¼
Set bevel to last named.

Jack Rafter

Plumb 3 - 12
Level. 12 - 3
Side.. 12⅜ - 12

Purlin Rafter Roof Sheathing

Plumb 3 - 12⅜
Cross. 12 - 12⅜

Valley Shingles

Cross. 12 - 12⅜
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 3 - 12
Mitre. 12⅜ - 12

Bisection of
3 - 12=2⅞ - 24

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		6⅛	¼	⅛
2	1	0⅜	½	¼
3	1	6½	¾	⅜
4	2	0¾	1	½
5	2	6⅞	¼	⅝
6	3	1⅛	½	¾
7	3	7¼	¾	⅞
8	4	1½	2	1
9	4	7⅝	¼	⅛
10	5	1⅞	½	¼
11	5	8	¾	⅜
12	6	2¼	3	½
13	6	8⅜	¼	⅝
14	7	2⅝	½	¾
15	7	8¾	¾	⅞
16	8	3	4	2
17	8	9⅛	¼	¼
18	9	3⅜	½	⅜
19	9	9½	¾	½
20	10	3¾	5	⅝
21	10	9⅞	¼	¾
22	11	4⅛	½	⅞
23	11	10¼	¾	3
24	12	4⅜	6	⅛
25	12	10⅝	¼	¼
26	13	4¾	½	⅜
27	13	11	¾	½
28	14	5⅛	7	⅝
29	14	11⅜	¼	¾
30	15	5½	½	⅞
31	15	11¾	¾	4
32	16	5⅞	8	⅛
33	17	0⅛	¼	¼
34	17	6¼	½	⅜
35	18	0½	¾	½
36	18	6⅝	9	⅝
37	19	0⅞	¼	¾
38	19	7	½	⅞
39	20	1¼	¾	5
40	20	7⅜	10	⅛
41	21	1⅝	¼	¼
42	21	7¾	½	⅜
43	22	2	¾	½
44	22	8⅛	11	⅝
45	23	2¼	¼	¾
46	23	8½	½	⅞
47	24	2⅝	¾	6
48	24	8⅞	12	⅛
49	25	3		
50	25	9¼		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		8⅝	¼	⅛
2	1	5¼	½	⅜
3	2	1⅞	¾	½
4	2	10½	1	¾
5	3	7⅛	¼	⅞
6	4	3¾	½	1⅛
7	5	0⅜	¾	¼
8	5	8⅞	2	⅜
9	6	5½	¼	⅝
10	7	2⅛	½	¾
11	7	10¾	¾	2
12	8	7⅜	3	⅛
13	9	4	¼	⅜
14	10	0⅝	½	½
15	10	9¼	¾	¾
16	11	5⅞	4	⅞
17	12	2½	¼	3
18	12	11⅛	½	¼
19	13	7¾	¾	⅜
20	14	4⅜	5	⅝
21	15	1	¼	¾
22	15	9⅝	½	4
23	16	6¼	¾	⅛
24	17	2¾	6	¼
25	17	11⅜	¼	½
26	18	8	½	⅝
27	19	4⅝	¾	⅞
28	20	1¼	7	5
29	20	9⅞	¼	¼
30	21	6½	½	⅜
31	22	3⅛	¾	⅝
32	22	11¾	8	¾
33	23	8⅜	¼	⅞
34	24	5	½	6⅛
35	25	1⅝	¾	¼
36	25	10¼	9	½
37	26	6⅞	¼	⅝
38	27	3½	½	⅞
39	28	0	¾	7
40	28	8⅝	10	⅛
41	29	5¼	¼	⅜
42	30	1⅞	½	½
43	30	10½	¾	¾
44	31	7⅛	11	⅞
45	32	3¾	¼	8⅛
46	33	0⅜	½	¼
47	33	9	¾	⅜
48	34	5⅝	12	⅝
49	35	2¼		
50	35	10⅞		

JACK RAFTER Spaced In.	Length Ft.	In.
1.		1
2..		2⅛
3..		3⅛
4..		4⅛
5..		5¼
6..		6¼
7..		7¼
8..		8⅜
9..		9⅜
10..		10⅜
11..		11½
12..	1	0½
13..		1½
14..		2⅝
15..		3⅝
16..		4⅝
17..		5¾
18..		6¾
19..		7¾
20..		8⅞
21..		9⅞
22..		10⅞
23..	2	0
24..		1
25..		2
26..		3⅛
27..		4⅛
28..		5⅛
29..		6¼
30..		7¼
31..		8¼
32..		9⅜
33..		10⅜
34..		11⅜
35..	3	0½
36..		1½
37..		2½
38..		3⅝
39..		4⅝
40..		5⅝
41..		6¾
42..		7¾
43..		8¾
44..		9⅞
45..		10⅞
46..		11⅞
47..	4	1
48..		2

3½ & 12—16¼°

EXPLANATION

Common Rafter

Width of building...........32'8¼"
Find length of Common Rafter.

Answer:

Under **Span**, ft. find 32' = 16' 8"
" " in. " 8¼" = 4¼"

Total length Common Rft. 17' 0¼"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 32'8¼", Hip rafter is 23'7¼" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 30" apart are 2'7¼" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 3½- 12
Level. 12 - 3½

Hip Rafter

Plumb 3½- 17
Level. 17 - 3½
Side.. 8⅝- 8½
Backing 3½- 17⅜
Set bevel to last named.

Jack Rafter

Plumb 3½- 12
Level. 12 - 3½
Side.. 12½- 12

Purlin Rafter Roof Sheathing

Plumb 3½- 12½
Cross. 12 - 12½

Valley Shingles

Cross. 12 - 12½
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 3½- 12
Mitre. 12½- 12

Bisection of
3½- 12=3⅜- 24

For full explanation see Index.

COMMON RAFTER			
Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 6¼	¼	⅛
2	1. 0½	½	¼
3	1. 6¾	¾	⅜
4	2. 1	1	½
5	2. 7¼	¼	⅝
6	3. 1½	½	¾
7	3. 7¾	¾	⅞
8	4. 2	2	1
9	4. 8¼	¼	⅛
10	5. 2½	½	¼
11	5. 8¾	¾	⅜
12	6. 3	3	⅝
13	6. 9¼	¼	¾
14	7. 3½	½	⅞
15	7. 9¾	¾	2
16	8. 4	4	⅛
17	8. 10¼	¼	¼
18	9. 4½	½	⅜
19	9. 10¾	¾	½
20	10. 5	5	⅝
21	10. 11¼	¼	¾
22	11. 5½	½	⅞
23	11. 11¾	¾	3
24	12. 6	6	⅛
25	13. 0¼	¼	¼
26	13. 6½	½	⅜
27	14. 0¾	¾	½
28	14. 7	7	⅝
29	15. 1¼	¼	¾
30	15. 7½	½	⅞
31	16. 1¾	¾	4
32	16. 8	8	⅛
33	17. 2¼	¼	¼
34	17. 8½	½	⅜
35	18. 2¾	¾	½
36	18. 9	9	¾
37	19. 3¼	¼	⅞
38	19. 9½	½	5
39	20. 3¾	¾	⅛
40	20. 10	10	¼
41	21. 4¼	¼	⅜
42	21. 10½	½	½
43	22. 4¾	¾	⅝
44	22. 11	11	¾
45	23. 5¼	¼	⅞
46	23. 11½	½	6
47	24. 5¾	¾	⅛
48	25. 0	12	¼
49	25. 6¼		
50	26. 0½		

HIP OR VALLEY RAFTER			
Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 8⅝	¼	⅛
2	1. 5⅜	½	⅜
3	2. 2	¾	½
4	2. 10⅝	1	¾
5	3. 7⅜	¼	⅞
6	4. 4	½	1⅛
7	5. 0⅝	¾	¼
8	5. 9¼	2	½
9	6. 6	¼	⅝
10	7. 2⅝	½	¾
11	7. 11¼	¾	2
12	8. 8	3	⅛
13	9. 4⅝	¼	⅜
14	10. 1¼	½	½
15	10. 10	¾	¾
16	11. 6⅝	4	⅞
17	12. 3¼	¼	3⅛
18	13. 0	½	¼
19	13. 8⅝	¾	⅜
20	14. 5¼	5	⅝
21	15. 2	¼	¾
22	15. 10⅝	½	4
23	16. 7¼	¾	⅛
24	17. 3⅞	6	⅜
25	18. 0⅝	¼	½
26	18. 9¼	½	¾
27	19. 5⅞	¾	⅞
28	20. 2⅝	7	5
29	20. 11¼	¼	¼
30	21. 7⅞	½	⅜
31	22. 4⅝	¾	⅝
32	23. 1¼	8	¾
33	23. 9⅞	¼	6
34	24. 6⅝	½	⅛
35	25. 3¼	¾	⅜
36	25 11⅞	9	½
37	26. 8⅝	¼	⅝
38	27. 5¼	½	⅞
39	28. 1⅞	¾	7
40	28. 10½	10	¼
41	29. 7¼	¼	⅜
42	30. 3⅞	½	⅝
43	31. 0½	¾	¾
44	31. 9¼	11	8
45	32. 5⅞	¼	⅛
46	33. 2½	½	¼
47	33. 11¼	¾	½
48	34. 7⅞	12	⅝
49	35. 4½		
50	36. 1¼		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1
2..		2⅛
3..		3⅛
4..		4¼
5..		5¼
6..		6⅜
7..		7⅜
8..		8⅜
9..		9½
10..		10½
11..		11⅝
12..	1	0⅝
13..		1¾
14..		2¾
15..		3¾
16..		4⅞
17..		5⅞
18..		7
19..		8
20..		9⅛
21..		10⅛
22..		11¼
23..	2	0¼
24..		1¼
25..		2⅜
26..		3⅜
27..		4½
28..		5½
29..		6⅝
30..		7⅝
31..		8⅝
32..		9¾
33..		10¾
34..		11⅞
35..	3	0⅞
36..		2
37..		3
38..		4
39..		5⅛
40..		6⅛
41..		7¼
42..		8¼
43..		9⅜
44..		10⅜
45..		11⅜
46..	4	0½
47..		1½
48..		2⅝

4 & 12 — 18½°

EXPLANATION

Common Rafter

Width of building...........31'4¾"
Find length of Common Rafter.

Answer:

Under **Span**, ft. find 31' = 16' 4"
" " in. " 4¾" = 2½"

Total length Common Rft. 16' 6½"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 31'4¾", Hip rafter is 22'9¾" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 28" apart are 2'5½" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb	4 -	12
Level.	12	4

Hip Rafter

Plumb	4 -	17
Level.	17 -	4
Side..	8¾ -	8½
Backing	4 -	17⅜

Set bevel to last named.

Jack Rafter

Plumb	4 -	12
Level.	12	4
Side..	12⅝ -	12

Purlin Rafter Roof Sheathing

Plumb	4 -	12⅝
Cross.	12 -	12⅝

Valley Shingles

Cross.	12 -	12⅝

Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb	4 -	12
Mitre.	12⅝ -	12

Bisection of
4- 12=3⅞- 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		6⅜	¼	⅛
2	1	0⅝	½	¼
3	1	7	¾	⅜
4	2	1¼	1	½
5	2	7⅝	¼	⅝
6	3	2	½	¾
7	3	8¼	¾	⅞
8	4	2⅝	2	1
9	4	8⅞	¼	⅛
10	5	3¼	½	⅜
11	5	9⅝	¾	½
12	6	3⅞	3	⅝
13	6	10¼	¼	¾
14	7	4½	½	⅞
15	7	10⅞	¾	2
16	8	5¼	4	⅛
17	8	11½	¼	¼
18	9	5⅞	½	⅜
19	10	0⅛	¾	½
20	10	6½	5	⅝
21	11	0⅞	¼	¾
22	11	7⅛	½	⅞
23	12	1½	¾	3
24	12	7¾	6	⅛
25	13	2⅛	¼	¼
26	13	8½	½	⅜
27	14	2¾	¾	½
28	14	9⅛	7	¾
29	15	3⅜	¼	⅞
30	15	9¾	½	4
31	16	4	¾	⅛
32	16	10⅜	8	¼
33	17	4¾	¼	⅜
34	17	11	½	½
35	18	5⅜	¾	⅝
36	18	11⅝	9	¾
37	19	6	¼	⅞
38	20	0⅜	½	5
39	20	6⅝	¾	⅛
40	21	1	10	¼
41	21	7¼	¼	⅜
42	22	1⅝	½	½
43	22	8	¾	⅝
44	23	2¼	11	¾
45	23	8⅝	¼	⅞
46	24	3	½	6
47	24	9¼	¾	¼
48	25	3⅝	12	⅜
49	25	9⅞		
50	26	4¼		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		8¾	¼	⅛
2	1	5⅜	½	⅜
3	2	2⅛	¾	½
4	2	10⅞	1	¾
5	3	7⅝	¼	⅞
6	4	4¼	½	1⅛
7	5	1	¾	¼
8	5	9¾	2	½
9	6	6½	¼	⅝
10	7	3⅛	½	⅞
11	7	11⅞	¾	2
12	8	8⅝	3	⅛
13	9	5⅜	¼	⅜
14	10	2	½	½
15	10	10¾	¾	¾
16	11	7½	4	⅞
17	12	4¼	¼	3⅛
18	13	0⅞	½	¼
19	13	9⅝	¾	½
20	14	6⅜	5	⅝
21	15	3⅛	¼	⅞
22	15	11¾	½	4
23	16	8½	¾	⅛
24	17	5¼	6	⅜
25	18	2	¼	½
26	18	10⅝	½	¾
27	19	7⅜	¾	⅞
28	20	4⅛	7	5⅛
29	21	0⅞	¼	¼
30	21	9½	½	½
31	22	6¼	¾	⅝
32	23	3	8	¾
33	23	11¾	¼	6
34	24	8⅜	½	⅛
35	25	5⅛	¾	⅜
36	26	1⅞	9	½
37	26	10½	¼	¾
38	27	7¼	½	⅞
39	28	4	¾	7⅛
40	29	0¾	10	¼
41	29	9⅜	¼	½
42	30	6⅛	½	⅝
43	31	2⅞	¾	¾
44	31	11⅝	11	8
45	32	8¼	¼	⅛
46	33	5	½	⅜
47	34	1¾	¾	½
48	34	10½	12	¾
49	35	7⅛		
50	36	3⅞		

JACK RAFTER Spaced In.	Length Ft.	 In.
1..		1⅛
2..		2⅛
3..		3¼
4..		4¼
5..		5⅜
6..		6⅜
7..		7½
8..		8½
9..		9⅝
10..		10⅝
11..		11¾
12..	1	0⅞
13..		1⅞
14..		3
15..		4
16..		5⅛
17..		6⅛
18..		7¼
19..		8¼
20..		9⅜
21..		10⅜
22..		11½
23..	2	0⅝
24..		1⅝
25..		2¾
26..		3¾
27..		4⅞
28..		5⅞
29..		7
30..		8
31..		9⅛
32..		10⅛
33..		11¼
34	3	0⅜
35..		1⅜
36..		2½
37..		3½
38..		4⅝
39..		5⅝
40..		6¾
41..		7¾
42..		8⅞
43..		9⅞
44..		11
45..	4	0
46..		1⅛
47..		2¼
48..		3¼

4½ & 12 — 20½°

EXPLANATION

Common Rafter

Width of building...........27′5½″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find	27′	=	14′	5″
" " **in.** "	5½″	=		3″
Total length Common Rft.			14′	8″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 27′5½″, Hip rafter is 20′1″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 35″ apart are 3′1⅜″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 4½- 12
Level. 12 - 4½

Hip Rafter

Plumb 4½- 17
Level. 17 - 4½
Side.. 8¾- 8½
Backing 4½- 17½
Set bevel to last named.

Jack Rafter

Plumb 4½- 12
Level. 12 - 4½
Side.. 12⅞- 12

Purlin Rafter
Roof Sheathing

Plumb 4½- 12⅞
Cross. 12 - 12⅞

Valley Shingles

Cross. 12 - 12⅞
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 4½- 12
Mitre. 12⅞- 12

Bisection of

4½- 12=4¼ - 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		6⅜	¼	⅛
2	1	0⅞	½	¼
3	1	7¼	¾	⅜
4	2	1⅝	1	½
5	2	8	¼	⅝
6	3	2½	½	¾
7	3	8⅞	¾	⅞
8	4	3¼	2	1⅛
9	4	9⅝	¼	¼
10	5	4⅛	½	⅜
11	5	10½	¾	½
12	6	4⅞	3	⅝
13	6	11¼	¼	¾
14	7	5¾	½	⅞
15	8	0⅛	¾	2
16	8	6½	4	⅛
17	9	0⅞	¼	¼
18	9	7⅜	½	⅜
19	10	1¾	¾	½
20	10	8⅛	5	⅝
21	11	2⅝	¼	¾
22	11	9	½	3
23	12	3⅜	¾	⅛
24	12	9¾	6	¼
25	13	4¼	¼	⅜
26	13	10⅝	½	½
27	14	5	¾	⅝
28	14	11⅜	7	¾
29	15	5⅞	¼	⅞
30	16	0¼	½	4
31	16	6⅝	¾	⅛
32	17	1	8	¼
33	17	7½	¼	⅜
34	18	1⅞	½	½
35	18	8¼	¾	⅝
36	19	2¾	9	¾
37	19	9⅛	¼	5
38	20	3½	½	⅛
39	20	9⅞	¾	¼
40	21	4⅜	10	⅜
41	21	10¾	¼	½
42	22	5⅛	½	⅝
43	22	11½	¾	¾
44	23	6	11	⅞
45	24	0⅜	¼	6
46	24	6¾	½	⅛
47	25	1⅛	¾	¼
48	25	7⅝	12	⅜
49	26	2		
50	26	8⅜		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		8¾	¼	⅛
2	1	5½	½	⅜
3	2	2⅜	¾	½
4	2	11⅛	1	¾
5	3	7⅞	¼	⅞
6	4	4⅝	½	1⅛
7	5	1½	¾	¼
8	5	10¼	2	½
9	6	7	¼	⅝
10	7	3¾	½	⅞
11	8	0⅝	¾	2
12	8	9⅜	3	¼
13	9	6⅛	¼	⅜
14	10	2⅞	½	½
15	10	11⅝	¾	¾
16	11	8½	4	⅞
17	12	5¼	¼	3⅛
18	13	2	½	¼
19	13	10¾	¾	½
20	14	7⅝	5	⅝
21	15	4⅜	¼	⅞
22	16	1⅛	½	4
23	16	9⅞	¾	¼
24	17	6⅝	6	⅜
25	18	3½	¼	⅝
26	19	0¼	½	¾
27	19	9	¾	⅞
28	20	5¾	7	5⅛
29	21	2⅝	¼	¼
30	21	11⅜	½	½
31	22	8⅛	¾	⅝
32	23	4⅞	8	⅞
33	24	1¾	¼	6
34	24	10½	½	¼
35	25	7¼	¾	⅜
36	26	4	9	⅝
37	27	0¾	¼	¾
38	27	9⅝	½	7
39	28	6⅜	¾	⅛
40	29	3⅛	10	⅜
41	29	11⅞	¼	½
42	30	8¾	½	⅝
43	31	5½	¾	⅞
44	32	2¼	11	8
45	32	11	¼	¼
46	33	7¾	½	⅜
47	34	4⅝	¾	⅝
48	35	1⅜	12	¾
49	35	10⅛		
50	36	6⅞		

JACK RAFTER

Spaced In.	Length Ft.	In.
1		1⅛
2		2⅛
3		3¼
4		4⅜
5		5⅜
6		6½
7		7⅝
8		8⅝
9		9¾
10		10⅞
11		11⅞
12	1	1
13		2⅛
14		3⅛
15		4¼
16		5⅜
17		6⅜
18		7½
19		8⅝
20		9⅝
21		10¾
22		11⅞
23	2	0⅞
24		2
25		3⅛
26		4⅛
27		5¼
28		6⅜
29		7⅜
30		8½
31		9⅝
32		10⅝
33		11¾
34	3	0⅞
35		1⅞
36		3
37		4⅛
38		5⅛
39		6¼
40		7⅜
41		8⅜
42		9½
43		10⅝
44		11⅝
45	4	0¾
46		1⅞
47		2⅞
48		4

5 & 12 — 22½°

EXPLANATION

Common Rafter

Width of building..........26′ 5½″

Find length of Common Rafter.

Answer:

Under **Span**, ft. find	26′	= 14′ 1″
" " in. "	5½″ =	3″

Total length Common Rft. 14′ 4″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. **Allow for** half thickness of ridge.

Spans over 50′, as 60′, **add lengths of 50′ & 10′ spans together.**

Hip Rafter

If common rafter span is 26′5½″, Hip rafter is 19′6″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 37″ apart are 3′4⅛″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 5 - 12
Level. 12 - 5

Hip Rafter

Plumb 5 - 17
Level. 17 - 5
Side.. 8⅞ - 8½
Backing 5 - 17¾
Set bevel to last named.

Jack Rafter

Plumb 5 - 12
Level. 12 - 5
Side.. 13 - 12

Purlin Rafter Roof Sheathing

Plumb 5 - 13
Cross. 12 - 13

Valley Shingles

Cross. 12 - 13
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 5 - 12
Mitre. 13 - 12

Bisection of

5- 12-4⅞- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 6½	¼	⅛
2	1. 1	½	¼
3	1. 7½	¾	⅜
4	2. 2	1	½
5	2. 8½	¼	⅝
6	3. 3	½	⅞
7	3. 9½	¾	1
8	4. 4	2	⅛
9	4.10½	¼	¼
10	5. 5	½	⅜
11	5.11½	¾	½
12	6. 6	3	⅝
13	7. 0½	¼	¾
14	7. 7	½	⅞
15	8. 1½	¾	2
16	8. 8	4	⅛
17	9. 2½	¼	¼
18	9. 9	½	½
19	10. 3½	¾	⅝
20	10.10	5	¾
21	11. 4½	¼	⅞
22	11.11	½	3
23	12. 5½	¾	⅛
24	13. 0	6	¼
25	13. 6½	¼	⅜
26	14. 1	½	½
27	14. 7½	¾	⅝
28	15. 2	7	¾
29	15. 8½	¼	⅞
30	16. 3	½	4⅛
31	16. 9½	¾	¼
32	17. 4	8	⅜
33	17.10½	¼	½
34	18. 5	½	⅝
35	18.11½	¾	¾
36	19. 6	9	⅞
37	20. 0½	¼	5
38	20. 7	½	⅛
39	21. 1½	¾	¼
40	21. 8	10	⅜
41	22. 2½	¼	½
42	22. 9	½	⅝
43	23. 3½	¾	⅞
44	23.10	11	6
45	24. 4½	¼	⅛
46	24.11	½	¼
47	25. 5½	¾	⅜
48	26. 0	12	½
49	26. 6½		
50	27. 1		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 8⅞	¼	⅛
2	1. 5¾	½	⅜
3	2. 2½	¾	½
4	2.11⅜	1	¾
5	3. 8¼	¼	⅞
6	4. 5⅛	½	1⅛
7	5. 1⅞	¾	¼
8	5.10¾	2	½
9	6. 7⅝	¼	⅝
10	7. 4½	½	⅞
11	8. 1¼	¾	2
12	8.10⅛	3	¼
13	9. 7	¼	⅜
14	10. 3⅞	½	⅝
15	11. 0¾	¾	¾
16	11. 9½	4	3
17	12. 6⅜	¼	⅛
18	13. 3¼	½	⅜
19	14. 0⅛	¾	½
20	14. 8⅞	5	⅝
21	15. 5¾	¼	⅞
22	16. 2⅝	½	4
23	16.11½	¾	¼
24	17. 8¼	6	⅜
25	18. 5⅛	¼	⅝
26	19. 2	½	¾
27	19.10⅞	¾	5
28	20. 7⅝	7	⅛
29	21. 4½	¼	⅜
30	22. 1⅜	½	½
31	22.10¼	¾	¾
32	23. 7⅛	8	⅞
33	24. 3⅞	¼	6⅛
34	25. 0¾	½	¼
35	25. 9⅝	¾	½
36	26. 6½	9	⅝
37	27. 3¼	¼	⅞
38	28. 0⅛	½	7
39	28. 9	¾	⅛
40	29. 5⅞	10	⅜
41	30. 2⅝	¼	½
42	30.11½	½	¾
43	31. 8⅜	¾	⅞
44	32. 5¼	11	8⅛
45	33 2⅛	¼	¼
46	33.10⅞	½	½
47	34. 7¾	¾	⅝
48	35. 4⅝	12	⅞
49	36. 1½		
50	36. 10¼		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1⅛
2..		2¼
3..		3¼
4..		4⅜
5..		5½
6..		6⅝
7..		7¾
8..		8¾
9..		9⅞
10..		11
11	1..	0⅛
12..		1¼
13..		2¼
14..		3⅜
15..		4½
16..		5⅝
17..		6¾
18..		7¾
19..		8⅞
20..		10
21..		11⅛
22..	2	0¼
23..		1¼
24..		2⅜
25..		3½
26..		4⅝
27..		5¾
28..		6¾
29..		7⅞
30..		9
31..		10⅛
32..		11¼
33..	3	0¼
34..		1⅜
35..		2½
36..		3⅝
37..		4¾
38..		5¾
39..		6⅞
40..		8
41..		9⅛
42..		10¼
43..		11¼
44..	4	0⅜
45..		1½
46..		2⅝
47..		3¾
48..		4¾

5½ & 12—24½°

EXPLANATION

Common Rafter

Width of building...........25′7¼″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 25′ = 13′ 9″
" " **in.** " 7¼″ = 4″

Total length Common Rft. 14′ 1″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 25′7¼″, Hip rafter is 19′0⅜″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 20′ apart are 1′10″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 5½- 12
Level. 12 - 5½

Hip Rafter

Plumb 5½- 17
Level. 17 - 5½
Side.. 8⅞- 8½
Backing 5½- 17⅞
Set bevel to last named.

Jack Rafter

Plumb 5½- 12
Level. 12 - 5½
Side.. 13¼- 12

Purlin Rafter Roof Sheathing

Plumb 5½- 13¼
Cross. 12 - 13¼

Valley Shingles

Cross. 12 - 13¼
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 5½- 12
Mitre. 13¼- 12

Bisection of
5½- 12=5¼- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 6⅝	¼	⅛
2	1. 1¼	½	¼
3	1. 7¾	¾	⅜
4	2. 2⅜	1	½
5	2. 9	¼	¾
6	3. 3⅝	½	⅞
7	3.10¼	¾	1
8	4. 4¾	2	⅛
9	4.11⅜	¼	¼
10	5. 6	½	⅜
11	6. 0⅝	¾	½
12	6. 7¼	3	⅝
13	7. 1¾	¼	¾
14	7. 8⅜	½	⅞
15	8. 3	¾	2
16	8. 9⅝	4	¼
17	9. 4¼	¼	⅜
18	9.10¾	½	½
19	10. 5⅜	¾	⅝
20	11. 0	5	¾
21	11. 6⅝	¼	⅞
22	12. 1¼	½	3
23	12. 7¾	¾	⅛
24	13. 2⅜	6	¼
25	13. 9	¼	⅜
26	14. 3⅝	½	⅝
27	14.10¼	¾	¾
28	15. 4¾	7	⅞
29	15.11⅜	¼	4
30	16. 6	½	⅛
31	17. 0⅝	¾	¼
32	17. 7¼	8	⅜
33	18. 1¾	¼	½
34	18. 8⅜	½	⅝
35	19. 3	¾	¾
36	19. 9⅝	9	5
37	20. 4¼	¼	⅛
38	20.10¾	½	¼
39	21. 5⅜	¾	⅜
40	22. 0	10	½
41	22. 6⅝	¼	⅝
42	23. 1¼	½	¾
43	23. 7¾	¾	⅞
44	24. 2⅜	11	6
45	24. 9	¼	⅛
46	25. 3⅝	½	⅜
47	25.10¼	¾	½
48	26. 4¾	12	⅝
49	26.11⅜		
50	27. 6		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 8⅞	¼	⅛
2	1. 5⅞	½	⅜
3	2. 2¾	¾	½
4	2.11⅝	1	¾
5	3. 8⅝	¼	⅞
6	4. 5½	½	1⅛
7	5. 2½	¾	¼
8	5.11⅜	2	½
9	6. 8¼	¼	⅝
10	7. 5¼	½	⅞
11	8. 2⅛	¾	2
12	8.11	3	¼
13	9. 8	¼	⅜
14	10. 4⅞	½	⅝
15	11. 1¾	¾	¾
16	11.10¾	4	3
17	12. 7⅝	¼	⅛
18	13. 4½	½	⅜
19	14. 1½	¾	½
20	14.10⅜	5	¾
21	15. 7⅜	¼	⅞
22	16. 4¼	½	4⅛
23	17. 1⅛	¾	¼
24	17.10⅛	6	½
25	18. 7	¼	⅝
26	19. 3⅞	½	⅞
27	20. 0⅞	¾	5
28	20. 9¾	7	¼
29	21. 6⅝	¼	⅜
30	22. 3⅝	½	⅝
31	23. 0½	¾	¾
32	23. 9⅜	8	6
33	24. 6⅜	¼	⅛
34	25. 3¼	½	⅜
35	26. 0¼	¾	½
36	26. 9⅛	9	¾
37	27. 6	¼	⅞
38	28. 3	½	7
39	28.11⅞	¾	¼
40	29. 8¾	10	⅜
41	30. 5¾	¼	⅝
42	31. 2⅝	½	¾
43	31.11½	¾	8
44	32. 8½	11	⅛
45	33. 5⅜	¼	⅜
46	34. 2¼	½	½
47	34.11¼	¾	¾
48	35. 8⅛	12	⅞
49	36. 5⅛		
50	37. 2		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1⅛
2..		2¼
3..		3⅜
4..		4½
5..		5⅝
6..		6¾
7..		7⅞
8..		9
9..		10⅛
10..		11⅛
11..	1	0¼
12..		1⅜
13..		2½
14..		3⅝
15..		4¾
16..		5⅞
17..		7
18..		8⅛
19..		9¼
20..		10⅜
21..		11½
22	2..	0⅝
23..		1¾
24..		2⅞
25..		4
26..		5⅛
27..		6⅛
28..		7¼
29..		8⅜
30..		9½
31..		10⅝
32..		11¾
33	3..	0⅞
34..		2
35..		3⅛
36..		4¼
37..		5⅜
38..		6½
39..		7⅝
40..		8¾
41..		9⅞
42..		11
43	4..	0⅛
44..		1¼
45..		2¼
46..		3⅜
47..		4½
48..		5⅝

6 & 12 — 26½°

EXPLANATION

Common Rafter

Width of building...........24′6¼″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 24′ = 13′ 5″
" " in. " 6¼″ = 3½″

Total length Common Rft. 13′ 8½″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 24′6¼″, Hip rafter is 18′4⅝″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 24″ apart are 2′2⅞″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 6 - 12
Level. 12 - 6

Hip Rafter

Plumb 6 - 17
Level. 17 - 6
Side.. 9 - 8½
Backing 6 - 18
Set bevel to last named.

Jack Rafter

Plumb 6 - 12
Level. 12 - 6
Side.. 13⅜- 12

Purlin Rafter Roof Sheathing

Plumb 6 - 13⅜ 6
Cross. 12 - 13⅜ 4

Valley Shingles

Cross. 12 - 13⅜
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 6 - 12
Mitre. 13⅜- 12

Bisection of
6- 12=5⅝- 24

For full explanation see Index.

Frieze Block

~~15°~~ Bevel 26°
miter 28°

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 6¾	¼	⅛
2	1. 1⅜	½	¼
3	1. 8⅛	¾	⅜
4	2. 2⅞	1	½
5	2. 9½	¼	¾
6	3. 4¼	½	⅞
7	3. 11	¾	1
8	4. 5⅝	2	⅛
9	5. 0⅜	¼	¼
10	5. 7⅛	½	⅜
11	6. 1¾	¾	½
12	6. 8½	3	⅝
13	7. 3¼	¼	⅞
14	7. 9⅞	½	2
15	8. 4⅝	¾	⅛
16	8. 11⅜	4	¼
17	9. 6	¼	⅜
18	10. 0¾	½	½
19	10. 7½	¾	⅝
20	11. 2⅛	5	¾
21	11. 8⅞	¼	⅞
22	12. 3⅝	½	3⅛
23	12. 10¼	¾	¼
24	13. 5	6	⅜
25	13. 11¾	¼	½
26	14. 6⅜	½	⅝
27	15. 1⅛	¾	¾
28	15. 7⅞	7	⅞
29	16. 2½	¼	4
30	16. 9¼	½	¼
31	17. 4	¾	⅜
32	17. 10⅝	8	½
33	18. 5⅜	¼	⅝
34	19. 0⅛	½	¾
35	19. 6¾	¾	⅞
36	20. 1½	9	5
37	20. 8¼	¼	⅛
38	21. 2⅞	½	¼
39	21. 9⅝	¾	½
40	22. 4⅜	10	⅝
41	22. 11	¼	¾
42	23. 5¼	½	⅞
43	24. 0½	¾	6
44	24. 7⅛	11	⅛
45	25. 1⅞	¼	¼
46	25. 8⅝	½	⅜
47	26. 3¼	¾	½
48	26. 10	12	¾
49	27. 4¾		
50	27. 11⅜		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9	¼	¼
2	1. 6	½	⅜
3	2. 3	¾	⅝
4	3. 0	1	¾
5	3. 9	¼	1
6	4. 6	½	⅛
7	5. 3	¾	¼
8	6. 0	2	½
9	6. 9	¼	⅝
10	7. 6	½	⅞
11	8. 3	¾	2
12	9. 0	3	¼
13	9. 9	¼	⅜
14	10. 6	½	⅝
15	11. 3	¾	¾
16	12. 0	4	3
17	12. 9	¼	⅛
18	13. 6	½	⅜
19	14. 3	¾	½
20	15. 0	5	¾
21	15. 9	¼	⅞
22	16. 6	½	4⅛
23	17. 3	¾	¼
24	18. 0	6	½
25	18. 9	¼	⅝
26	19. 6	½	⅞
27	20. 3	¾	5
28	21. 0	7	¼
29	21. 9	¼	⅜
30	22. 6	½	⅝
31	23. 3	¾	¾
32	24. 0	8	6
33	24. 9	¼	⅛
34	25. 6	½	⅜
35	26. 3	¾	½
36	27. 0	9	¾
37	27. 9	¼	⅞
38	28. 6	½	7⅛
39	29. 3	¾	¼
40	30. 0	10	½
41	30. 9	¼	⅝
42	31. 6	½	⅞
43	32. 3	¾	8
44	33. 0	11	¼
45	33. 9	¼	⅜
46	34. 6	½	⅝
47	35. 3	¾	¾
48	36. 0	12	9
49	36. 9		
50	37. 6		

Ma-k Vall 17°

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1⅛
2..		2¼
3..		3⅜
4..		4½
5..		5⅝
6..		6⅞
7..		8
8..		9⅛
9..		10¼
10..		11⅜
11..	1	0½
12..		1⅝
13..		2¾
14..		3⅞
15..		5
16..		6¼
17..		7⅜
18..		8½
19..		9⅝
20..		10¾
21..		11⅞
22..	2	1
23..		2⅛
24..		3¼
25..		4⅜
26..		5⅝
27..		6¾
28..		7⅞
29..		9
30..		10⅛
31..		11¼
32..	3	0⅜
33..		1½
34..		2⅝
35..		3¾
36..		4⅞
37..		6⅛
38..		7¼
39..		8⅜
40..		9½
41..		10⅝
42..		11¾
43..	4	0⅞
44..		2
45..		3⅛
46..		4¼
47..		5½
48..		6⅝

6½ & 12 — 28¼°

EXPLANATION

Common Rafter

Width of building...........23′5¼″
Find length of Common Rafter.

Answer:

Under Span, ft. find 23′ = 13′ 1″
" " in. " 5¼″ = 3″

Total length Common Rft. 13′ 4″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 23′5¼″, Hip rafter is 17′9″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 22″ apart are 2′1″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 6½- 12
Level. 12 - 6½

Hip Rafter

Plumb 6½- 17
Level. 17 - 6½
Side.. 9⅛- 8½
Backing 6½- 18⅛
Set bevel to last named.

Jack Rafter

Plumb 6½- 12
Level. 12 - 6½
Side.. 13⅝- 12

Purlin Rafter Roof Sheathing

Plumb 6½- 13⅝
Cross. 12 - 13⅝

Valley Shingles

Cross. 12 - 13⅝
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 6½- 12
Mitre. 13⅝- 12

Bisection of
6½- 12=6 - 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 6⅞	¼	⅛
2	1. 1⅝	½	¼
3	1. 8½	¾	⅜
4	2. 3¼	1	⅝
5	2.10⅛	¼	¾
6	3. 5	½	⅞
7	3.11¾	¾	1
8	4. 6⅝	2	⅛
9	5. 1⅜	¼	¼
10	5. 8¼	½	⅜
11	6. 3	¾	⅝
12	6. 9⅞	3	¾
13	7. 4¾	¼	⅞
14	7.11½	½	2
15	8. 6⅜	¾	⅛
16	9. 1⅛	4	¼
17	9. 8	¼	⅜
18	10. 2⅞	½	½
19	10. 9⅝	¾	¾
20	11. 4½	5	⅞
21	11.11¼	¼	3
22	12. 6⅛	½	⅛
23	13. 1	¾	¼
24	13. 7¾	6	⅜
25	14. 2⅝	¼	½
26	14. 9⅜	½	¾
27	15. 4¼	¾	⅞
28	15.11	7	4
29	16. 5⅞	¼	⅛
30	17. 0¾	½	¼
31	17. 7½	¾	⅜
32	18. 2⅜	8	½
33	18. 9⅛	¼	⅝
34	19. 4	½	⅞
35	19.10⅞	¾	5
36	20. 5⅝	9	⅛
37	21. 0½	¼	¼
38	21. 7¼	½	⅜
39	22. 2⅛	¾	½
40	22. 9	10	⅝
41	23. 3¾	¼	⅞
42	23.10⅝	½	6
43	24. 5⅜	¾	⅛
44	25. 0¼	11	¼
45	25. 7⅛	¼	⅜
46	26. 1⅞	½	½
47	26. 8¾	¾	⅝
48	27. 3½	12	⅞
49	27.10⅜		
50	28. 5⅛		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9⅛	¼	¼
2	1. 6⅛	½	⅜
3	2. 3¼	¾	⅝
4	3. 0⅜	1	¾
5	3. 9⅜	¼	1
6	4. 6½	½	⅛
7	5. 3⅝	¾	⅜
8	6. 0¾	2	½
9	6. 9¾	¼	¾
10	7. 6⅞	½	⅞
11	8. 4	¾	2⅛
12	9. 1	3	¼
13	9.10⅛	¼	½
14	10. 7¼	½	⅝
15	11. 4¼	¾	⅞
16	12. 1⅜	4	3
17	12.10½	¼	¼
18	13. 7½	½	⅜
19	14. 4⅝	¾	⅝
20	15. 1¾	5	¾
21	15.10¾	¼	4
22	16. 7⅞	½	⅛
23	17. 5	¾	⅜
24	18. 2⅛	6	½
25	18.11⅛	¼	¾
26	19. 8¼	½	⅞
27	20. 5⅜	¾	5⅛
28	21. 2⅜	7	¼
29	21.11½	¼	½
30	22. 8⅝	½	⅝
31	23. 5⅝	¾	⅞
32	24. 2¾	8	6
33	24.11⅞	¼	¼
34	25. 8⅞	½	⅜
35	26. 6	¾	⅝
36	27. 3⅛	9	¾
37	28. 0⅛	¼	7
38	28. 9¼	½	⅛
39	29. 6⅜	¾	⅜
40	30. 3½	10	½
41	31. 0½	¼	¾
42	31. 9⅝	½	8
43	32. 6¾	¾	⅛
44	33. 3¾	11	⅜
45	34. 0⅞	¼	½
46	34.10	½	¾
47	35. 7	¾	⅞
48	36. 4⅛	12	9⅛
49	37. 1¼		
50	37.10¼		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1⅛
2..		2⅜
3..		3½
4..		4⅝
5..		5¾
6..		7
7..		8⅛
8..		9¼
9..		10⅜
10..		11⅝
11..	1	0¾
12..		1⅞
13..		3
14..		4¼
15..		5⅜
16..		6½
17..		7⅝
18..		8⅞
19..		10
20..		11⅛
21..	2	0¼
22..		1½
23..		2⅝
24..		3¾
25..		5
26..		6⅛
27..		7¼
28..		8⅜
29..		9⅝
30..		10¾
31..		11⅞
32..	3	1
33..		2¼
34..		3⅜
35..		4½
36..		5⅝
37..		6⅞
38..		8
39..		9⅛
40..		10¼
41..		11½
42..	4	0⅝
43..		1¾
44..		3
45..		4⅛
46..		5¼
47..		6⅜
48..		7⅝

7 & 12 — 30¼°

EXPLANATION

Common Rafter

Width of building...........19′5¼″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 19 = 11′ 0″
" " **in.** " 5¼″ = 3″

Total length Common Rft. 11′ 3″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 19′5¼″, Hip rafter is 14′10⅜″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 28″ apart are 2′8⅜″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 7 - 12
Level. 12 - 7

Hip Rafter

Plumb 7 - 17
Level. 17 - 7
Side.. 9⅛ - 8½
Backing 7 - 18⅜

Set bevel to last named.

Jack Rafter

Plumb 7 - 12
Level. 12 - 7
Side.. 13⅞ - 12

Purlin Rafter Roof Sheathing

Plumb 7 - 13⅞
Cross. 12 - 13⅞

Valley Shingles

Cross. 12 - 13⅞

Set bevel on butt end.

Mitre-Box-Cut for Gable Mould,

Plumb 7 - 12
Mitre. 13⅞ - 12

Bisection of

7 - 12 = 6½ - 24

For full explanation see **Index.**

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		7	¼	⅛
2	1	1⅞	½	¼
3	1	8⅞	¾	⅜
4	2	3¾	1	⅝
5	2	10¾	¼	¾
6	3	5⅝	½	⅞
7	4	0⅝	¾	1
8	4	7⅝	2	⅛
9	5	2½	¼	¼
10	5	9½	½	½
11	6	4⅜	¾	⅝
12	6	11⅜	3	¾
13	7	6¼	¼	⅞
14	8	1¼	½	2
15	8	8¼	¾	⅛
16	9	3⅛	4	⅜
17	9	10⅛	¼	½
18	10	5	½	⅝
19	11	0	¾	¾
20	11	6⅞	5	⅞
21	12	1⅞	¼	3
22	12	8⅞	½	⅛
23	13	3¾	¾	⅜
24	13	10¾	6	½
25	14	5⅝	¼	⅝
26	15	0⅝	½	¾
27	15	7½	¾	⅞
28	16	2½	7	4
29	16	9⅜	¼	⅛
30	17	4⅜	½	¼
31	17	11⅜	¾	½
32	18	6¼	8	⅝
33	19	1¼	¼	¾
34	19	8⅛	½	⅞
35	20	3⅛	¾	5
36	20	10	9	¼
37	21	5	¼	⅜
38	22	0	½	½
39	22	6⅞	¾	⅝
40	23	1⅞	10	¾
41	23	8¾	¼	⅞
42	24	3¾	½	6⅛
43	24	10⅝	¾	¼
44	25	5⅜	11	⅜
45	26	0⅝	¼	½
46	26	7½	½	⅝
47	27	2½	¾	¾
48	27	9⅜	12	⅞
49	28	4⅜		
50	28	11¼		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		9⅛	¼	¼
2	1	6⅜	½	⅜
3	2	3½	¾	⅝
4	3	0¾	1	¾
5	3	9⅞	¼	1
6	4	7⅛	½	⅛
7	5	4¼	¾	⅜
8	6	1⅜	2	½
9	6	10⅝	¼	¾
10	7	7¾	½	⅞
11	8	5	¾	2⅛
12	9	2⅛	3	¼
13	9	11⅜	¼	½
14	10	8½	½	⅝
15	11	5⅝	¾	⅞
16	12	2⅞	4	3
17	13	0	¼	¼
18	13	9¼	½	½
19	14	6⅜	¾	⅝
20	15	3⅝	5	⅞
21	16	0¾	¼	4
22	16	9⅞	½	¼
23	17	7⅛	¾	⅜
24	18	4¼	6	⅝
25	19	1½	¼	¾
26	19	10⅝	½	5
27	20	7⅞	¾	⅛
28	21	5	7	⅜
29	22	2⅛	¼	½
30	22	11⅜	½	¾
31	23	8½	¾	⅞
32	24	5¾	8	6⅛
33	25	2⅞	¼	¼
34	26	0⅛	½	½
35	26	9¼	¾	¾
36	27	6⅜	9	⅞
37	28	3⅝	¼	7⅛
38	29	0¾	½	¼
39	29	10	¾	½
40	30	7⅛	10	⅝
41	31	4⅜	¼	⅞
42	32	1½	½	8
43	32	10⅝	¾	¼
44	33	7⅞	11	⅜
45	34	5	¼	⅝
46	35	2¼	½	¾
47	35	11⅜	¾	9
48	36	8⅝	12	⅛
49	37	5¾		
50	38	2⅞		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1⅛
2..		2⅜
3..		3½
4..		4¾
5..		5⅞
6..		7⅛
7..		8¼
8..		9⅜
9..		10⅝
10..		11¾
11..	1	1
12..		2⅛
13..		3⅜
14..		4½
15..		5⅝
16..		6⅞
17..		8
18..		9¼
19..		10⅜
20..		11⅝
21..	2	0¾
22..		2
23..		3⅛
24..		4¼
25..		5½
26..		6⅝
27..		7⅞
28..		9
29..		10¼
30..		11⅜
31..	3	0½
32..		1¾
33..		2⅞
34..		4⅛
35..		5¼
36..		6½
37..		7⅝
38..		8¾
39..		10
40..		11⅛
41..	4	0⅜
42..		1½
43..		2¾
44..		3⅞
45..		5
46..		6¼
47..		7⅜
48..		8⅝

7½ & 12—32°

EXPLANATION

Common Rafter

Width of building..........27′1¼″
Find length of Common Rafter.
Answer:
Under **Span, ft.** find 27′ = 15′11″
" " **in.** " 1¼″ = 0¾″

Total length Common Rft. 15′11¾″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. **Allow for** half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 27′1¼″, Hip rafter is 20′11½″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 26″ apart are 2′6⅝″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 7½- 12
Level. 12 - 7½

Hip Rafter
Plumb 7½- 17
Level. 17 - 7½
Side.. 9¼- 8½
Backing 7½- 18½
Set bevel to last named.

Jack Rafter
Plumb 7½- 12
Level. 12 - 7½
Side.. 14⅛- 12

Purlin Rafter Roof Sheathing
Plumb 7½- 14⅛
Cross. 12 - 14⅛

Valley Shingles
Cross. 12 - 14⅛
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 7½- 12
Mitre. 14⅛- 12

Bisection of
7½- 12=6⅞- 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		7⅛	¼	⅛
2	1	2⅛	½	¼
3	1	9¼	¾	½
4	2	4¼	1	⅝
5	2	11⅜	¼	¾
6	3	6½	½	⅞
7	4	1½	¾	1
8	4	8⅝	2	⅛
9	5	3⅝	¼	⅜
10	5	10¾	½	½
11	6	5⅞	¾	⅝
12	7	0⅞	3	¾
13	7	8	¼	⅞
14	8	3	½	2⅛
15	8	10⅛	¾	¼
16	9	5¼	4	⅜
17	10	0¼	¼	½
18	10	7⅜	½	⅝
19	11	2⅜	¾	¾
20	11	9½	5	3
21	12	4⅝	¼	⅛
22	12	11⅝	½	¼
23	13	6¾	¾	⅜
24	14	1¾	6	½
25	14	8⅞	¼	⅝
26	15	4	½	⅞
27	15	11	¾	4
28	16	6⅛	7	⅛
29	17	1⅛	¼	¼
30	17	8¼	½	⅜
31	18	3⅜	¾	⅝
32	18	10⅜	8	¾
33	19	5½	¼	⅞
34	20	0⅝	½	5
35	20	7⅝	¾	⅛
36	21	2¾	9	¼
37	21	9¾	¼	½
38	22	4⅞	½	⅝
39	23	0	¾	¾
40	23	7	10	⅞
41	24	2⅛	¼	6
42	24	9⅛	½	⅛
43	25	4¼	¾	⅜
44	25	11⅜	11	½
45	26	6⅜	¼	⅝
46	27	1½	½	¾
47	27	8½	¾	⅞
48	28	3⅝	12	7⅛
49	28	10⅝		
50	29	5¾		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		9¼	¼	¼
2	1	6½	½	⅜
3	2	3⅞	¾	⅝
4	3	1⅛	1	¾
5	3	10⅜	¼	1
6	4	7⅝	½	⅛
7	5	5	¾	⅜
8	6	2¼	2	½
9	6	11½	¼	¾
10	7	8¾	½	⅞
11	8	6	¾	2⅛
12	9	3⅜	3	⅜
13	10	0⅝	¼	½
14	10	9⅞	½	¾
15	11	7⅛	¾	⅞
16	12	4⅜	4	3⅛
17	13	1¾	¼	¼
18	13	11	½	½
19	14	8¼	¾	⅝
20	15	5½	5	⅞
21	16	2⅞	¼	4
22	17	0⅛	½	¼
23	17	9⅜	¾	½
24	18	6⅝	6	⅝
25	19	3⅞	¼	⅞
26	20	1¼	½	5
27	20	10½	¾	¼
28	21	7¾	7	⅜
29	22	5	¼	⅝
30	23	2¼	½	¾
31	23	11⅝	¾	6
32	24	8⅞	8	⅛
33	25	6⅛	¼	⅜
34	26	3⅜	½	⅝
35	27	0¾	¾	¾
36	27	10	9	7
37	28	7¼	¼	⅛
38	29	4½	½	⅜
39	30	1¾	¾	½
40	30	11⅛	10	¾
41	31	8⅜	¼	⅞
42	32	5⅝	½	8⅛
43	33	2⅞	¾	¼
44	34	0⅛	11	½
45	34	9½	¼	¾
46	35	6¾	½	⅞
47	36	4	¾	9⅛
48	37	1¼	12	¼
49	37	10⅝		
50	38	7⅞		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1¼
2..		2⅜
3..		3⅝
4..		4¾
5..		6
6..		7¼
7..		8⅜
8..		9⅝
9..		10⅞
10..	1	0
11..		1¼
12..		2⅜
13..		3⅝
14..		4⅞
15..		6
16..		7¼
17..		8⅜
18..		9⅝
19..		10⅞
20..	2	0
21..		1¼
22..		2½
23..		3⅝
24..		4⅞
25..		6
26..		7¼
27..		8½
28..		9⅝
29..		10⅞
30..	3	0
31..		1¼
32..		2½
33..		3⅝
34..		4⅞
35..		6⅛
36..		7¼
37..		8½
38..		9⅝
39..		10⅞
40..	4	0⅛
41..		1¼
42..		2½
43..		3⅝
44..		4⅞
45..		6⅛
46..		7¼
47..		8½
48..		9⅝

8 & 12 — 33¾°

EXPLANATION

Common Rafter

Width of building...........38′3¼″
Find length of Common Rafter.

Answer:

Under Span, ft.	find	38′	= 22′10″
" " in.	"	3¼″ =	2″

Total length Common Rft. 23′ 0″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 38′3¼″, Hip rafter is 29′11″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 32″ apart are 3′2½″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 8 - 12
Level. 12 - 8

Hip Rafter

Plumb 8 - 17
Level. 17 - 8
Side.. 9⅜- 8½
Backing 8 - 18¾
Set bevel to last named.

Jack Rafter

Plumb 8 - 12
Level. 12 - 8
Side.. 14⅜- 12

Purlin Rafter
Roof Sheathing

Plumb 8 - 14⅜
Cross. 12 - 14⅜

Valley Shingles

Cross. 12 - 14⅜
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 8 - 12
Mitre. 14⅜- 12

Bisection of
8- 12=7¼- 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		7¼	¼	⅛
2	1	2⅜	½	¼
3	1	9⅝	¾	½
4	2	4⅞	1	⅝
5	3	0	¼	¾
6	3	7¼	½	⅞
7	4	2½	¾	1
8	4	9¾	2	¼
9	5	4⅞	¼	⅜
10	6	0⅛	½	½
11	6	7⅜	¾	⅝
12	7	2½	3	¾
13	7	9¾	¼	2
14	8	5	½	⅛
15	9	0⅛	¾	¼
16	9	7⅜	4	⅜
17	10	2⅝	¼	½
18	10	9¾	½	¾
19	11	5	¾	⅞
20	12	0¼	5	3
21	12	7½	¼	⅛
22	13	2⅝	½	¼
23	13	9⅞	¾	½
24	14	5⅛	6	⅝
25	15	0¼	¼	¾
26	15	7½	½	⅞
27	16	2¾	¾	4
28	16	9⅞	7	¼
29	17	5⅛	¼	⅜
30	18	0⅜	½	½
31	18	7½	¾	⅝
32	19	2¾	8	¾
33	19	10	¼	5
34	20	5⅛	½	⅛
35	21	0⅜	¾	¼
36	21	7⅝	9	⅜
37	22	2¾	¼	½
38	22	10	½	¾
39	23	5¼	¾	⅞
40	24	0½	10	6
41	24	7⅝	¼	⅛
42	25	2⅞	½	¼
43	25	10⅛	¾	½
44	26	5¼	11	⅝
45	27	0½	¼	¾
46	27	7¾	½	⅞
47	28	2⅞	¾	7
48	28	10⅛	12	¼
49	29	5⅜		
50	30	0½		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		9⅜	¼	¼
2	1	6¾	½	⅜
3	2	4⅛	¾	⅝
4	3	1½	1	¾
5	3	10⅞	¼	1
6	4	8¼	½	⅛
7	5	5⅝	¾	⅜
8	6	3	2	⅝
9	7	0⅜	¼	¾
10	7	9¾	½	2
11	8	7¼	¾	⅛
12	9	4⅝	3	⅜
13	10	2	¼	½
14	10	11⅜	½	¾
15	11	8¾	¾	⅞
16	12	6⅛	4	3⅛
17	13	3½	¼	⅜
18	14	0⅞	½	½
19	14	10¼	¾	¾
20	15	7⅝	5	⅞
21	16	5	¼	4⅛
22	17	2⅜	½	¼
23	17	11¾	¾	½
24	18	9⅛	6	¾
25	19	6½	¼	⅞
26	20	3⅞	½	5⅛
27	21	1¼	¾	¼
28	21	10⅝	7	½
29	22	8	¼	⅝
30	23	5⅜	½	⅞
31	24	2¾	¾	6
32	25	0⅛	8	¼
33	25	9⅝	¼	½
34	26	7	½	⅝
35	27	4⅜	¾	⅞
36	28	1¾	9	7
37	28	11⅛	¼	¼
38	29	8½	½	⅜
39	30	5⅞	¾	⅝
40	31	3¼	10	⅞
41	32	0⅝	¼	8
42	32	10	½	¼
43	33	7⅜	¾	⅜
44	34	4¾	11	⅝
45	35	2⅛	¼	¾
46	35	11½	½	9
47	36	8⅞	¾	⅛
48	37	6¼	12	⅜
49	38	3⅝		
50	39	1		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1¼
2..		2½
3..		3⅝
4..		4⅞
5..		6⅛
6..		7⅜
7..		8⅝
8..		9¾
9..		11
10..	1	0¼
11..		1½
12..		2¾
13..		3⅞
14..		5⅛
15..		6⅜
16..		7⅝
17..		8⅞
18..		10
19..		11¼
20..	2	0½
21..		1¾
22..		3
23..		4⅛
24..		5⅜
25..		6⅝
26..		7⅞
27..		9⅛
28..		10¼
29..		11½
30..	3	0¾
31..		2
32..		3¼
33..		4½
34..		5⅝
35..		6⅞
36..		8⅛
37..		9⅜
38..		10⅝
39..		11¾
40..	4	1
41..		2¼
42..		3½
43..		4¾
44..		5⅞
45..		7⅛
46..		8⅜
47..		9⅝
48..		10⅞

8½ & 12 — 35¼°

EXPLANATION

Common Rafter

Width of building...........34′6½″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find **34′** = 20′10″
" " **in.** " **6½″** = 4″

Total length Common Rft. 21′ 2″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 34′6½″, Hip rafter is 27′3¾″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 38″ apart are 3′10⅝″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 8½- 12
Level. 12 - 8½

Hip Rafter

Plumb 8½- 17
Level. 17 - 8½
Side.. 9½- 8½
Backing 8½- 19
Set bevel to last named.

Jack Rafter

Plumb 8½- 12
Level. 12 - 8½
Side.. 14¾- 12

Purlin Rafter Roof Sheathing

Plumb 8½- 14¾
Cross. 12 - 14¾

Valley Shingles

Cross. 12 - 14¾
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 8½- 12
Mitre. 14¾- 12

Bisection of
8½- 12=7½- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 7⅜	¼	⅛
2	1. 2¾	½	¼
3	1.10	¾	½
4	2. 5⅜	1	⅝
5	3. 0¾	¼	¾
6	3. 8⅛	½	⅞
7	4. 3½	¾	1⅛
8	4.10⅞	2	¼
9	5. 6⅛	¼	⅜
10	6. 1½	½	½
11	6. 8⅞	¾	¾
12	7. 4¼	3	⅞
13	7.11⅝	¼	2
14	8. 7	½	⅛
15	9. 2¼	¾	¼
16	9. 9⅝	4	½
17	10. 5	¼	⅝
18	11. 0⅜	½	¾
19	11. 7¾	¾	⅞
20	12. 3	5	3
21	12.10⅜	¼	¼
22	13. 5¾	½	⅜
23	14. 1⅛	¾	½
24	14. 8½	6	⅝
25	15. 3⅞	¼	⅞
26	15.11⅛	½	4
27	16. 6½	¾	⅛
28	17. 1⅞	7	¼
29	17. 9¼	¼	½
30	18. 4⅝	½	⅝
31	18.11⅞	¾	¾
32	19. 7¼	8	⅞
33	20. 2⅝	¼	5
34	20.10	½	¼
35	21. 5⅜	¾	⅜
36	22. 0¾	9	½
37	22. 8	¼	⅝
38	23. 3⅜	½	⅞
39	23.10¾	¾	6
40	24. 6⅛	10	⅛
41	25. 1½	¼	¼
42	25. 8⅞	½	⅜
43	26. 4⅛	¾	⅝
44	26.11½	11	¾
45	27. 6⅞	¼	⅞
46	28. 2¼	½	7
47	28. 9⅝	¾	¼
48	29. 5	12	⅜
49	30. 0¼		
50	30. 7⅝		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9½	¼	¼
2	1. 7	½	⅜
3	2. 4½	¾	⅝
4	3. 2	1	¾
5	3.11½	¼	1
6	4. 9	½	⅛
7	5. 6½	¾	⅜
8	6. 3⅞	2	⅝
9	7. 1⅜	¼	¾
10	7.10⅞	½	2
11	8. 8⅜	¾	⅛
12	9. 5⅞	3	⅜
13	10. 3⅜	¼	⅝
14	11. 0⅞	½	¾
15	11.10⅜	¾	3
16	12. 7⅞	4	⅛
17	13. 5⅜	¼	⅜
18	14. 2⅞	½	½
19	15. 0⅜	¾	¾
20	15. 9¾	5	4
21	16. 7¼	¼	⅛
22	17. 4¾	½	⅜
23	18. 2¼	¾	½
24	18.11¾	6	¾
25	19. 9¼	¼	5
26	20. 6¾	½	⅛
27	21. 4¼	¾	⅜
28	22. 1¾	7	½
29	22.11¼	¼	¾
30	23. 8¾	½	⅞
31	24. 6¼	¾	6⅛
32	25. 3⅝	8	⅜
33	26. 1⅛	¼	½
34	26.10⅝	½	¾
35	27. 8⅛	¾	⅞
36	28. 5⅝	9	7⅛
37	29. 3⅛	¼	¼
38	30. 0⅝	½	½
39	30.10⅛	¾	¾
40	31. 7⅝	10	⅞
41	32. 5⅛	¼	8⅛
42	33. 2⅝	½	¼
43	34. 0⅛	¾	½
44	34. 9½	11	¾
45	35. 7	¼	⅞
46	36. 4½	½	9⅛
47	37. 2	¾	¼
48	37.11½	12	½
49	38. 9		
50	39. 6½		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1¼
2..		2½
3..		3¾
4..		5
5..		6¼
6..		7½
7..		8¾
8..		10
9..		11¼
10..	1	0½
11..		1¾
12..		3
13..		4¼
14..		5½
15..		6¾
16..		8
17..		9¼
18..		10½
19..		11¾
20..	2	1
21..		2¼
22..		3½
23..		4¾
24..		6
25..		7¼
26..		8½
27..		9¾
28..		11
29..	3	0¼
30..		1½
31..		2¾
32..		4
33..		5¼
34..		6½
35..		7¾
36..		9
37..		10¼
38..		11½
39..	4	0¾
40..		2
41..		3¼
42..		4½
43..		5¾
44..		7
45..		8¼
46..		9½
47..		10¾
48..	5	0

9 & 12 — 37°

EXPLANATION

Common Rafter

Width of building...........24'6½"
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 24' = 15' 0"
" " **in.** " 6½" = 4"

Total length Common Rft. 15' 4"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 24'6½", Hip rafter is 19'7¾" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 32" apart are 3'4" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb **9 - 12**
Level. **12 - 9**

Hip Rafter

Plumb **9 - 17**
Level. **17 - 9**
Side.. **9⅝ - 8½**
Backing **9 - 19¼**

Set bevel to last named.

Jack Rafter

Plumb **9 - 12**
Level. **12 - 9**
Side.. **15 - 12**

Purlin Rafter Roof Sheathing

Plumb **9 - 15**
Cross. **12 - 15**

Valley Shingles

Cross. **12 - 15**

Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb **9 - 12**
Mitre. **15 - 12**

Bisection of
9- 12=7⅞- 24

For full explanation see **Index.**

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 7½	¼	⅛
2	1. 3	½	⅜
3	1.10½	¾	½
4	2. 6	1	⅝
5	3. 1½	¼	¾
6	3. 9	½	1
7	4. 4½	¾	⅛
8	5. 0	2	¼
9	5. 7½	¼	⅜
10	6. 3	½	⅝
11	6.10½	¾	¾
12	7. 6	3	⅞
13	8. 1½	¼	2
14	8. 9	½	⅛
15	9. 4½	¾	⅜
16	10. 0	4	½
17	10. 7½	¼	⅝
18	11. 3	½	¾
19	11.10½	¾	3
20	12. 6	5	⅛
21	13. 1½	¼	¼
22	13. 9	½	⅜
23	14. 4½	¾	⅝
24	15. 0	6	¾
25	15. 7½	¼	⅞
26	16. 3	½	4
27	16.10½	¾	¼
28	17. 6	7	⅜
29	18. 1½	¼	½
30	18. 9	½	⅝
31	19. 4½	¾	⅞
32	20. 0	8	5
33	20. 7½	¼	⅛
34	21. 3	½	¼
35	21.10½	¾	½
36	22. 6	9	⅝
37	23. 1½	¼	¾
38	23. 9	½	⅞
39	24. 4½	¾	6⅛
40	25. 0	10	¼
41	25. 7½	¼	⅜
42	26. 3	½	½
43	26.10½	¾	¾
44	27. 6	11	⅞
45	28. 1½	¼	7
46	28. 9	½	⅛
47	29. 4½	¾	⅜
48	30. 0	12	½
49	30. 7½		
50	31. 3		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9⅝	¼	¼
2	1. 7¼	½	⅜
3	2. 4⅞	¾	⅝
4	3. 2⅜	1	¾
5	4. 0	¼	1
6	4. 9⅝	½	¼
7	5. 7¼	¾	⅜
8	6. 4⅞	2	⅝
9	7. 2½	¼	¾
10	8. 0	½	2
11	8. 9⅝	¾	¼
12	9. 7¼	3	⅜
13	10. 4⅞	¼	⅝
14	11. 2½	½	¾
15	12. 0⅛	¾	3
16	12. 9⅝	4	¼
17	13. 7¼	¼	⅜
18	14. 4⅞	½	⅝
19	15. 2½	¾	¾
20	16. 0⅛	5	4
21	16. 9¾	¼	¼
22	17. 7¼	½	⅜
23	18. 4⅞	¾	⅝
24	19. 2½	6	¾
25	20. 0⅛	¼	5
26	20. 9¾	½	¼
27	21. 7⅜	¾	⅜
28	22. 4⅞	7	⅝
29	23. 2½	¼	¾
30	24. 0⅛	½	6
31	24. 9¾	¾	¼
32	25. 7⅜	8	⅜
33	26. 5	¼	⅝
34	27. 2½	½	¾
35	28. 0⅛	¾	7
36	28. 9¾	9	¼
37	29. 7⅜	¼	⅜
38	30. 5	½	⅝
39	31. 2⅝	¾	¾
40	32. 0⅛	10	8
41	32. 9¾	¼	¼
42	33. 7⅜	½	⅜
43	34. 5	¾	⅝
44	35. 2⅝	11	¾
45	36. 0¼	¼	9
46	36. 9¾	½	¼
47	37. 7⅜	¾	⅜
48	38. 5	12	⅝
49	39. 2⅝		
50	40. 0¼		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1¼
2..		2½
3..		3⅞
4..		5⅛
5..		6⅜
6..		7⅝
7..		8⅞
8..		10¼
9..		11½
10..	1	0¾
11..		2
12..		3¼
13..		4⅝
14..		5⅞
15..		7⅛
16..		8⅜
17..		9⅝
18..		11
19..	**2**	0¼
20..		1½
21..		2¾
22..		4
23..		5⅜
24..		6⅝
25..		7⅞
26..		9⅛
27..		10½
28..		11¾
29..	**3**	1
30..		2¼
31..		3½
32..		4⅞
33..		6⅛
34..		7⅜
35..		8⅝
36..		9⅞
37..		11¼
38..	**4**	0½
39..		1¾
40..		3
41..		4¼
42..		5⅝
43..		6⅞
44..		8⅛
45..		9⅜
46..		10⅝
47..	**5**	0
48..		1¼

9½ & 12 — 38½°

EXPLANATION

Common Rafter

Width of building...........17′2½″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 17′ = 10′10⅛″
" " **in.** " 2½″ = 1⅝″

Total length Common Rft. 10′11¾″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 17′2½″, Hip rafter is 13′11¼″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 28″ apart are 2′11¾″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 9½- 12
Level. 12 - 9½

Hip Rafter

Plumb 9½- 17
Level. 17 - 9½
Side.. 9¾- 8½
Backing 9½- 19½
Set bevel to last named.

Jack Rafter

Plumb 9½- 12
Level. 12 - 9½
Side.. 15¼- 12

Purlin Rafter Roof Sheathing

Plumb 9½- 15¼
Cross. 12 - 15¼

Valley Shingles

Cross. 12 - 15¼
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 9½- 12
Mitre. 15¼- 12

Bisection of
9½- 12=8¼- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		7⅝	¼	⅛
2	1	3¼	½	⅜
3	1	11	¾	½
4	2	6⅝	1	⅝
5	3	2¼	¼	¾
6	3	9⅞	½	1
7	4	5⅝	¾	⅛
8	5	1¼	2	¼
9	5	8⅞	¼	⅜
10	6	4½	½	⅝
11	7	0⅛	¾	¾
12	7	7⅞	3	⅞
13	8	3½	¼	2⅛
14	8	11⅛	½	¼
15	9	6¾	¾	⅜
16	10	2½	4	½
17	10	10⅛	¼	¾
18	11	5¾	½	⅞
19	12	1⅜	¾	3
20	12	9	5	¼
21	13	4¾	¼	⅜
22	14	0⅜	½	½
23	14	8	¾	⅝
24	15	3⅝	6	⅞
25	15	11⅜	¼	4
26	16	7	½	⅛
27	17	2⅝	¾	¼
28	17	10¼	7	½
29	18	5⅞	¼	⅝
30	19	1⅝	½	¾
31	19	9¼	¾	5
32	20	4⅞	8	⅛
33	21	0½	¼	¼
34	21	8¼	½	⅜
35	22	3⅞	¾	⅝
36	22	11½	9	¾
37	23	7⅛	¼	⅞
38	24	2¾	½	6
39	24	10½	¾	¼
40	25	6⅛	10	⅜
41	26	1¾	¼	½
42	26	9⅜	½	¾
43	27	5	¾	⅞
44	28	0¾	11	7
45	28	8⅜	¼	⅛
46	29	4	½	⅜
47	29	11⅝	¾	½
48	30	7⅜	12	⅝
49	31	3		
50	31	10⅝		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		9¾	¼	¼
2	1	7½	½	⅜
3	2	5⅛	¾	⅝
4	3	2⅞	1	¾
5	4	0⅝	¼	1
6	4	10⅜	½	¼
7	5	8⅛	¾	⅜
8	6	5¾	2	⅝
9	7	3½	¼	⅞
10	8	1¼	½	2
11	8	11	¾	¼
12	9	8¾	3	⅜
13	10	6⅜	¼	⅝
14	11	4⅛	½	⅞
15	12	1⅞	¾	3
16	12	11⅝	4	¼
17	13	9¼	¼	½
18	14	7	½	⅝
19	15	4¾	¾	⅞
20	16	2½	5	4
21	17	0¼	¼	¼
22	17	9⅞	½	½
23	18	7⅝	¾	⅝
24	19	5⅜	6	⅞
25	20	3⅛	¼	5⅛
26	21	0⅞	½	¼
27	21	10½	¾	½
28	22	8¼	7	⅝
29	23	6	¼	⅞
30	24	3¾	½	6⅛
31	25	1½	¾	¼
32	25	11⅛	8	½
33	26	8⅞	¼	⅝
34	27	6⅝	½	⅞
35	28	4⅜	¾	7⅛
36	29	2⅛	9	¼
37	29	11¾	¼	½
38	30	9½	½	¾
39	31	7¼	¾	⅞
40	32	5	10	8⅛
41	33	2⅝	¼	¼
42	34	0⅜	½	½
43	34	10⅛	¾	¾
44	35	7⅞	11	⅞
45	36	5⅝	¼	9⅛
46	37	3¼	½	⅜
47	38	1	¾	½
48	38	10¾	12	¾
49	39	8½		
50	40	6¼		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1¼
2..		2⅝
3..		3⅞
4..		5¼
5..		6½
6..		7¾
7..		9⅛
8..		10⅜
9..		11¾
10..	1	1
11..		2⅜
12..		3⅝
13..		4⅞
14..		6¼
15..		7½
16..		8⅞
17..		10⅛
18..		11⅜
19..	2	0¾
20..		2
21..		3⅜
22..		4⅝
23..		6
24..		7¼
25..		8½
26..		9⅞
27..		11⅛
28..	3	0½
29..		1¾
30..		3
31..		4⅜
32..		5⅝
33..		7
34..		8¼
35..		9½
36..		10⅞
37..	4	0⅛
38..		1½
39..		2¾
40..		4⅛
41..		5⅜
42..		6⅝
43..		8
44..		9¼
45..		10⅝
46..		11⅞
47..	5	1⅛
48..		2½

10 & 12 — 40°

EXPLANATION

Common Rafter

Width of building...........20'7¼"
Find length of Common Rafter.
Answer:
Under **Span, ft.** find 20' = 13' 0¼"
" " **in.** " 7¼" = 4¾"

Total length Common Rft. 13' 5"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 20'7¼", Hip rafter is 16'11" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 24" apart are 2'7¼" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 10 - 12
Level. 12 - 10

Hip Rafter

Plumb 10 - 17
Level. 17 - 10
Side.. 9⅞- 8½
Backing 10 - 19¾
Set bevel to last named.

Jack Rafter

Plumb 10 - 12
Level. 12 - 10
Side.. 15⅝- 12

Purlin Rafter Roof Sheathing

Plumb 10..-.15⅝
Cross. 12 - 15⅝

Valley Shingles

Cross. 12 - 15⅝
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 10 - 12
Mitre. 15⅝- 12

Bisection of
10- 12=8⅝- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 7¾	¼	⅛
2	1. 3⅝	½	⅜
3	1.11⅜	¾	½
4	2. 7¼	1	⅝
5	3. 3	¼	⅞
6	3.10⅞	½	1
7	4. 6⅝	¾	⅛
8	5. 2½	2	¼
9	5.10¼	¼	½
10	6. 6⅛	½	⅝
11	7. 1⅞	¾	¾
12	7. 9¾	3	2
13	8. 5½	¼	⅛
14	9. 1⅜	½	¼
15	9. 9⅛	¾	½
16	10. 5	4	⅝
17	11. 0¾	¼	¾
18	11. 8⅝	½	⅞
19	12. 4⅜	¾	3⅛
20	13. 0¼	5	¼
21	13. 8	¼	⅜
22	14. 3⅞	½	⅝
23	14.11⅝	¾	¾
24	15. 7½	6	⅞
25	16. 3¼	¼	4⅛
26	16.11	½	¼
27	17. 6⅞	¾	⅜
28	18. 2⅝	7	½
29	18.10½	¼	¾
30	19. 6¼	½	⅞
31	20. 2⅛	¾	5
32	20.10	8	¼
33	21. 5¾	¼	⅜
34	22. 1½	½	½
35	22. 9⅜	¾	¾
36	23. 5⅛	9	⅞
37	24. 1	¼	6
38	24. 8¾	½	⅛
39	25. 4⅝	¾	⅜
40	26. 0⅜	10	½
41	26. 8¼	¼	⅝
42	27. 4	½	⅞
43	27.11⅞	¾	7
44	28. 7⅝	11	⅛
45	29. 3½	¼	⅜
46	29.11¼	½	½
47	30. 7⅛	¾	⅝
48	31. 2⅞	12	¾
49	31.10¾		
50	32. 6½		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9⅞	¼	¼
2	1. 7¾	½	⅜
3	2. 5½	¾	⅝
4	3. 3⅜	1	⅞
5	4. 1¼	¼	1
6	4.11⅛	½	¼
7	5. 9	¾	⅜
8	6. 6¾	2	⅝
9	7. 4⅝	¼	⅞
10	8. 2½	½	2
11	9. 0⅜	¾	¼
12	9.10¼	3	½
13	10. 8	¼	⅝
14	11. 5⅞	½	⅞
15	12. 3¾	¾	3⅛
16	13. 1⅝	4	¼
17	13.11⅜	¼	½
18	14. 9¼	½	¾
19	15. 7⅛	¾	⅞
20	16. 5	5	4⅛
21	17. 2⅞	¼	¼
22	18. 0⅝	½	½
23	18.10½	¾	¾
24	19. 8⅜	6	⅞
25	20. 6¼	¼	5⅛
26	21. 4⅛	½	⅜
27	22. 1⅞	¾	½
28	22.11¾	7	¾
29	23. 9⅝	¼	6
30	24. 7½	½	⅛
31	25. 5⅜	¾	⅜
32	26. 3⅛	8	⅝
33	27. 1	¼	¾
34	27.10⅞	½	7
35	28. 8¾	¾	⅛
36	29. 6⅝	9	⅜
37	30. 4⅜	¼	⅝
38	31. 2¼	½	¾
39	32. 0⅛	¾	8
40	32.10	10	¼
41	33. 7¾	¼	⅜
42	34. 5⅝	½	⅝
43	35. 3½	¾	⅞
44	36. 1⅜	11	9
45	36.11¼	¼	¼
46	37. 9	½	½
47	38. 6⅞	¾	⅝
48	39. 4¾	12	⅞
49	40. 2⅝		
50	41. 0½		

JACK RAFTER

Spaced In.	Length Ft.	Length In.
1..		1⅜
2..		2⅝
3..		4
4..		5⅜
5..		6⅝
6..		8
7..		9¼
8..		10⅝
9..	1	0
10..		1¼
11..		2⅝
12..		4
13..		5¼
14..		6⅝
15..		7⅞
16..		9¼
17..		10⅝
18..		11⅞
19..	2	1¼
20..		2⅝
21..		3⅞
22..		5¼
23..		6½
24..		7⅞
25..		9¼
26..		10½
27..		11⅞
28..	3	1¼
29..		2½
30..		3⅞
31..		5¼
32..		6½
33..		7⅞
34..		9⅛
35..		10½
36..		11⅞
37..	4	1⅛
38..		2½
39..		3⅞
40..		5⅛
41..		6½
42..		7¾
43..		9⅛
44..		10½
45..		11¾
46..	5	1⅛
47..		2½
48..		3¾

10½ & 12—41¼°

EXPLANATION

Common Rafter

Width of building...........28′3¾″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find	28′	= 18′ 7¼″
" " **in.** "	3¾″ =	2½″
Total length Common Rft.		18′ 9¾″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 28′3¾″, Hip rafter is 23′6½″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 21″ apart are 2′3⅞″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 10½- 12
Level. 12 - 10½

Hip Rafter

Plumb 10½- 17
Level. 17 - 10½
Side.. 10 - 8½
Backing 10½- 20
Set bevel to last named.

Jack Rafter

Plumb 10½- 12
Level. 12 - 10½
Side.. 16 - 12

Purlin Rafter Roof Sheathing

Plumb 10½- 16
Cross. 12 - 16

Valley Shingles

Cross. 12 - 16
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 10½- 12
Mitre. 16 - 12

Bisection of

10½- 12=8⅞- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 8	¼	⅛
2	1. 4	½	⅜
3	1.11⅞	¾	½
4	2. 7⅞	1	⅝
5	3. 3⅞	¼	⅞
6	3.11⅞	½	1
7	4. 7¾	¾	⅛
8	5. 3¾	2	⅜
9	5.11¾	¼	½
10	6. 7¾	½	⅝
11	7. 3¾	¾	⅞
12	7.11⅝	3	2
13	8. 7⅝	¼	⅛
14	9. 3⅝	½	⅜
15	9.11⅝	¾	½
16	10. 7½	4	⅝
17	11. 3½	¼	⅞
18	11.11½	½	3
19	12. 7½	¾	⅛
20	13. 3½	5	⅜
21	13.11⅜	¼	½
22	14. 7⅜	½	⅝
23	15. 3⅜	¾	⅞
24	15.11⅜	6	4
25	16. 7⅜	¼	⅛
26	17. 3¼	½	⅜
27	17.11¼	¾	½
28	18. 7¼	7	⅝
29	19. 3¼	¼	⅞
30	19.11⅛	½	5
31	20. 7⅛	¾	⅛
32	21. 3⅛	8	⅜
33	21.11⅛	¼	½
34	22. 7⅛	½	⅝
35	23. 3	¾	¾
36	23.11	9	6
37	24. 7	¼	⅛
38	25. 3	½	¼
39	25.10⅞	¾	½
40	26. 6⅞	10	⅝
41	27. 2⅞	¼	¾
42	27.10⅞	½	7
43	28. 6⅞	¾	⅛
44	29. 2¾	11	¼
45	29.10¾	¼	½
46	30. 6¾	½	⅝
47	31. 2¾	¾	¾
48	31.10⅝	12	8
49	32. 6⅝		
50	33. 2⅝		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth In.
1	.10	¼	¼
2	1. 8	½	⅜
3	2. 5⅞	¾	⅝
4	3. 3⅞	1	⅞
5	4. 1⅞	¼	1
6	4.11⅞	½	¼
7	5. 9⅞	¾	½
8	6. 7⅞	2	⅝
9	7. 5¾	¼	⅞
10	8. 3¾	½	2⅛
11	9. 1¾	¾	¼
12	9.11¾	3	½
13	10. 9¾	¼	¾
14	11. 7¾	½	⅞
15	12. 5⅝	¾	3⅛
16	13. 3⅝	4	⅜
17	14. 1⅝	¼	½
18	14.11⅝	½	¾
19	15. 9⅝	¾	4
20	16. 7½	5	⅛
21	17. 5½	¼	⅜
22	18. 3½	½	⅝
23	19. 1½	¾	¾
24	19.11½	6	5
25	20. 9½	¼	¼
26	21. 7⅜	½	⅜
27	22. 5⅜	¾	⅝
28	23. 3⅜	7	⅞
29	24. 1⅜	¼	6
30	24.11⅜	½	¼
31	25. 9⅜	¾	½
32	26. 7¼	8	⅝
33	27. 5¼	¼	⅞
34	28. 3¼	½	7⅛
35	29. 1¼	¾	¼
36	29.11¼	9	½
37	30. 9⅛	¼	¾
38	31. 7⅛	½	⅞
39	32. 5⅛	¾	8⅛
40	33. 3⅛	10	⅜
41	34. 1⅛	¼	½
42	34.11⅛	½	¾
43	35. 9	¾	9
44	36. 7	11	⅛
45	37. 5	¼	⅜
46	38. 3	½	⅝
47	39. 1	¾	¾
48	39.11	12	10
49	40. 8⅞		
50	41. 6⅞		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1⅜
2..		2¾
3..		4⅛
4..		5⅜
5..		6¾
6..		8⅛
7..		9½
8..		10⅞
9..	1	0¼
10..		1⅝
11..		2⅞
12..		4¼
13..		5⅝
14..		7
15..		8⅜
16..		9¾
17..		11
18..	2	0⅜
19..		1¾
20..		3⅛
21..		4½
22..		5⅞
23..		7¼
24..		8½
25..		9⅞
26..		11¼
27..	3	0⅝
28.		2
29..		3⅜
30..		4¾
31..		6
32..		7⅜
33..		8¾
34..		10⅛
35..		11½
36..	4	0⅞
37..		2¼
38..		3½
39..		4⅞
40..		6¼
41..		7⅝
42..		9
43..		10⅜
44..		11⅝
45..	5	1
46..		2⅜
47..		3¾
48..		5⅛

11 & 12—42½°

EXPLANATION

Common Rafter

Width of building...........18′2¼″
Find length of Common Rafter.
Answer:
Under **Span, ft.** find 18′ = 12′ 2½″
" " **In.** " 2¼″ = 1½″

Total length Common Rft. 12′ 4″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 18′2¼″, Hip rafter is 15′3⅞″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 34″ apart are 3′10⅛″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 11 - 12
Level. 12 - 11

Hip Rafter
Plumb 11 - 17
Level. 17 - 11
Side.. 10⅛- 8½
Backing 11 - 20¼
Set bevel to last named.

Jack Rafter
Plumb 11 - 12
Level. 12 - 11
Side.. 16¼- 12

Purlin Rafter Roof Sheathing
Plumb 11 - 16¼
Cross. 12 - 16¼

Valley Shingles
Cross. 12 - 16¼
Set bevel on Butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 11 - 12
Mitre. 16¼- 12

Bisection of
11- 12=9¼- 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		8⅛	¼	¼
2	1	4¼	½	⅜
3	2	0⅜	¾	½
4	2	8½	1	⅝
5	3	4¾	¼	⅞
6	4	0⅞	½	1
7	4	9	¾	¼
8	5	5⅛	2	⅜
9	6	1¼	¼	½
10	6	9⅜	½	¾
11	7	5½	¾	⅞
12	8	1⅝	3	2
13	8	9¾	¼	¼
14	9	6	½	⅜
15	10	2⅛	¾	½
16	10	10¼	4	¾
17	11	6⅜	¼	⅞
18	12	2½	½	3
19	12	10⅝	¾	¼
20	13	6¾	5	⅜
21	14	2⅞	¼	½
22	14	11	½	¾
23	15	7¼	¾	⅞
24	16	3⅜	6	4⅛
25	16	11½	¼	¼
26	17	7⅝	½	⅜
27	18	3¾	¾	⅝
28	18	11⅞	7	¾
29	19	8	¼	⅞
30	20	4⅛	½	5⅛
31	21	0¼	¾	¼
32	21	8½	8	⅜
33	22	4⅝	¼	⅝
34	23	0¾	½	¾
35	23	8⅞	¾	⅞
36	24	5	9	6⅛
37	25	1⅛	¼	¼
38	25	9¼	½	½
39	26	5⅜	¾	⅝
40	27	1½	10	¾
41	27	9¾	¼	7
42	28	5⅞	½	⅛
43	29	2	¾	¼
44	29	10⅛	11	½
45	30	6¼	¼	⅝
46	31	2⅜	½	¾
47	31	10½	¾	8
48	32	6⅝	12	⅛
49	33	2¾		
50	33	11		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		10⅛	¼	¼
2	1	8¼	½	⅜
3	2	6⅜	¾	⅝
4	3	4½	1	⅞
5	4	2½	¼	1
6	5	0⅝	½	¼
7	5	10¾	¾	½
8	6	8⅞	2	⅝
9	7	7	¼	⅞
10	8	5⅛	½	2⅛
11	9	3¼	¾	⅜
12	10	1⅜	3	½
13	10	11½	¼	¾
14	11	9⅝	½	3
15	12	7⅝	¾	⅛
16	13	5¾	4	⅜
17	14	3⅞	¼	⅝
18	15	2	½	¾
19	16	0⅛	¾	4
20	16	10¼	5	¼
21	17	8⅜	¼	⅜
22	18	6½	½	⅝
23	19	4⅝	¾	⅞
24	20	2¾	6	5
25	21	0¾	¼	¼
26	21	10⅞	½	½
27	22	9	¾	⅝
28	23	7⅛	7	⅞
29	24	5¼	¼	6⅛
30	25	3⅜	½	⅜
31	26	1½	¾	½
32	26	11⅝	8	¾
33	27	9¾	¼	7
34	28	7¾	½	⅛
35	29	5⅞	¾	⅜
36	30	4	9	⅝
37	31	2⅛	¼	¾
38	32	0¼	½	8
39	32	10⅜	¾	¼
40	33	8½	10	⅜
41	34	6⅝	¼	⅝
42	35	4¾	½	⅞
43	36	2⅞	¾	9
44	37	0⅞	11	¼
45	37	11	¼	½
46	38	9⅛	½	¾
47	39	7¼	¾	⅞
48	40	5⅜	12	10⅛
49	41	3½		
50	42	1⅝		

11½ & 12 — 43¾°

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1⅜
2..		2¾
3..		4⅛
4..		5½
5..		6⅞
6..		8¼
7..		9¾
8..		11⅛
9	1	0½
10..		1⅞
11..		3¼
12..		4⅝
13..		6
14..		7⅜
15..		8¾
16..		10⅛
17..		11½
18	2	1
19..		2⅜
20..		3¾
21..		5⅛
22..		6½
23..		7⅞
24..		9¼
25..		10⅝
26..	3	0
27..		1⅜
28..		2¾
29..		4⅛
30..		5½
31..		7
32..		8⅜
33..		9¾
34..		11⅛
35	4	0½
36..		1⅞
37..		3¼
38..		4⅝
39..		6
40..		7⅜
41..		8¾
42..		10⅛
43..		11½
44..	5	1
45..		2⅜
46..		3¾
47..		5⅛
48..		6½

EXPLANATION

Common Rafter

Width of building...........33′2½″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 33′ = 22′10¼″
" " **in.** " 2½″ = 1¾″

Total length Common Rft. 23′ 0″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 33′2½″, Hip rafter is 28′4⅜″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 28″ apart are 3′2¾″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 11½- 12
Level. 12 - 11½

Hip Rafter
Plumb 11½- 17
Level. 17 - 11½
Side.. 10¼- 8½
Backing 11½- 20½
Set bevel to last named.

Jack Rafter
Plumb 11½- 12
Level. 12 - 11½
Side.. 16⅝- 12

Purlin Rafter Roof-Sheathing
Plumb 11½- 16⅝
Cross. 12 - 16⅝

Valley Shingles
Cross. 12 - 16⅝
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 11½- 12
Mitre. 16⅝- 12

Bisection of
11½ 12=9½- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		8¼	¼	¼
2	1	4⅝	½	⅜
3	2	1	¾	½
4	2	9¼	**1**	¾
5	3	5½	¼	⅞
6	4	1⅞	½	1
7	4	10⅛	¾	¼
8	5	6½	**2**	⅜
9	6	2¾	¼	½
10	6	11⅛	½	¾
11	7	7⅜	¾	⅞
12	8	3¾	**3**	**2**⅛
13	9	0	¼	¼
14	9	8⅜	½	⅜
15	10	4⅝	¾	⅝
16	11	1	**4**	¾
17	11	9¼	¼	**3**
18	12	5⅝	½	⅛
19	13	1⅞	¾	¼
20	13	10¼	**5**	½
21	14	6½	¼	⅝
22	15	2⅞	½	¾
23	15	11⅛	¾	**4**
24	16	7½	**6**	⅛
25	17	3¾	¼	⅜
26	18	0⅛	½	½
27	18	8⅜	¾	⅝
28	19	4¾	**7**	⅞
29	20	1	¼	**5**
30	20	9⅜	½	¼
31	21	5⅝	¾	⅜
32	22	2	**8**	½
33	22	10¼	¼	¾
34	23	6½	½	⅞
35	24	2⅞	¾	**6**
36	24	11⅛	**9**	¼
37	25	7½	¼	⅜
38	26	3¾	½	⅝
39	27	0⅛	¾	¾
40	27	8⅜	**10**	⅞
41	28	4¾	¼	**7**⅛
42	29	1	½	¼
43	29	9⅜	¾	½
44	30	5⅝	**11**	⅝
45	31	2	¼	¾
46	31	10¼	½	**8**
47	32	6⅝	¾	⅛
48	33	2⅞	**12**	¼
49	33	11¼		
50	34	7½		

HIP or VALLEY RAFTER

Span Ft.	Length Ft.	Length In.	Span In.	Lgth. In.
1		10¼	¼	¼
2	1	8½	½	⅜
3	2	6¾	¾	⅝
4	3	5	**1**	⅞
5	4	3¼	¼	1⅛
6	5	1½	½	¼
7	5	11¾	¾	½
8	6	10	**2**	¾
9	7	8¼	¼	⅞
10	8	6½	½	**2**⅛
11	9	4¾	¾	⅜
12	10	3	**3**	⅝
13	11	1¼	¼	¾
14	11	11½	½	**3**
15	12	9¾	¾	¼
16	13	8	**4**	⅜
17	14	6¼	¼	⅝
18	15	4½	½	⅞
19	16	2¾	¾	**4**
20	17	1	**5**	¼
21	17	11¼	¼	½
22	18	9½	½	¾
23	19	7¾	¾	⅞
24	20	6	**6**	**5**⅛
25	21	4¼	¼	⅜
26	22	2½	½	½
27	23	0¾	¾	¾
28	23	11	**7**	**6**
29	24	9¼	¼	¼
30	25	7½	½	⅜
31	26	5¾	¾	⅝
32	27	4	**8**	⅞
33	28	2¼	¼	**7**
34	29	0½	½	¼
35	29	10¾	¾	½
36	30	9	**9**	⅝
37	31	7¼	¼	⅞
38	32	5½	½	**8**⅛
39	33	3¾	¾	⅜
40	34	2	**10**	½
41	35	0¼	¼	¾
42	35	10½	½	**9**
43	36	8¾	¾	⅛
44	37	7	**11**	⅜
45	38	5¼	¼	⅝
46	39	3½	½	⅞
47	40	1¾	¾	**10**
48	41	0	**12**	¼
49	41	10¼		
50	42	8½		

JACK RAFTER

Spaced In.	Length Ft.	Length In.
1..		1⅜
2..		2⅞
3..		4¼
4..		5⅝
5..		7⅛
6..		8½
7..		9⅞
8..		11⅜
9	1	0¾
10..		2⅛
11..		3½
12..		5
13..		6⅜
14..		7¾
15..		9¼
16..		10⅝
17	2	0
18..		1½
19..		2⅞
20..		4¼
21..		5¾
22..		7⅛
23..		8½
24..		9⅞
25..		11⅜
26	3	0¾
27..		2¼
28..		3⅝
29..		5
30..		6⅜
31..		7⅞
32..		9¼
33..		10⅝
34	4	0⅛
35..		1½
36..		2⅞
37..		4⅜
38..		5¾
39..		7⅛
40..		8⅝
41..		10
42..		11⅜
43..	5	0⅞
44..		2¼
45..		3⅝
46..		5
47..		6½
48..		7⅞

12 & 12—45°

EXPLANATION

Common Rafter

Width of building...........50′3½″
Find length of Common Rafter.

Answer:

Under Span, ft. find 50′ = 35′ 4¼″
" " in. " 3½″ = 2½″

Total length Common Rft. 35′ 6¾″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 50′3½″, Hip rafter is 43′6⅝″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 32″ apart are 3′9¼″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 12 - 12
Level. 12 - 12

Hip Rafter

Plumb 12 - 17
Level. 17 - 12
Side.. 10⅜- 8½
Backing12 - 20¾

Set bevel to last named.

Jack Rafter

Plumb 12 - 12
Level. 12 - 12
Side.. 17 - 12

Purlin Rafter Roof Sheathing

Plumb 12 - 17
Cross. 12 - [illegible]

Valley Shingles

Cross. 12 - 17

Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 12 - 12
Mitre. 17 - 12

Bisection of
12- 12=9⅞- 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		8½	¼	⅛
2	1	5	½	⅜
3	2	1½	¾	½
4	2	10	1	¾
5	3	6⅜	¼	⅞
6	4	2⅞	½	1
7	4	11⅜	¾	¼
8	5	7⅞	2	⅜
9	6	4⅜	¼	⅝
10	7	0⅞	½	¾
11	7	9⅜	¾	2
12	8	5⅞	3	⅛
13	9	2¼	¼	¼
14	9	10¾	½	½
15	10	7¼	¾	⅝
16	11	3¾	4	⅞
17	12	0¼	¼	3
18	12	8¾	½	⅛
19	13	5¼	¾	⅜
20	14	1¾	5	½
21	14	10⅛	¼	¾
22	15	6⅝	½	⅞
23	16	3⅛	¾	4⅛
24	16	11⅝	6	¼
25	17	8⅛	¼	⅜
26	18	4⅝	½	⅝
27	19	1⅛	¾	¾
28	19	9⅝	7	5
29	20	6⅛	¼	⅛
30	21	2½	½	¼
31	21	11	¾	½
32	22	7½	8	⅝
33	23	4	¼	⅞
34	24	0½	½	6
35	24	9	¾	¼
36	25	5½	9	⅜
37	26	2	¼	½
38	26	10⅜	½	¾
39	27	6⅞	¾	⅞
40	28	3⅜	10	7⅛
41	28	11⅞	¼	¼
42	29	8⅜	½	⅜
43	30	4⅞	¾	⅝
44	31	1⅜	11	¾
45	31	9⅞	¼	8
46	32	6¼	½	⅛
47	33	2¾	¾	¼
48	33	11¼	12	½
49	34	7¾		
50	35	4¼		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		10⅜	¼	¼
2	1	8¾	½	⅜
3	2	7⅛	¾	⅝
4	3	5⅝	1	⅞
5	4	4	¼	1⅛
6	5	2⅜	½	¼
7	6	0¾	¾	½
8	6	11⅛	2	¾
9	7	9½	¼	2
10	8	7⅞	½	⅛
11	9	6⅜	¾	⅜
12	10	4¾	3	⅝
13	11	3⅛	¼	⅞
14	12	1½	½	3
15	12	11⅞	¾	¼
16	13	10¼	4	½
17	14	8⅝	¼	⅝
18	15	7	½	⅞
19	16	5½	¾	4⅛
20	17	3¾	5	⅜
21	18	2¼	¼	½
22	19	0⅝	½	¾
23	19	11	¾	5
24	20	9⅜	6	¼
25	21	7¾	¼	⅜
26	22	6¼	½	⅝
27	23	4⅝	¾	⅞
28	24	3	7	6
29	25	1⅜	¼	¼
30	25	11¾	½	½
31	26	10⅛	¾	¾
32	27	8½	8	⅞
33	28	6⅞	¼	7⅛
34	29	5⅜	½	⅜
35	30	3¾	¾	⅝
36	31	2⅛	9	¾
37	32	0½	¼	8
38	32	10⅞	½	¼
39	33	9¼	¾	½
40	34	7⅝	10	⅝
41	35	6⅛	¼	⅞
42	36	4½	½	9⅛
43	37	2⅞	¾	¼
44	38	1¼	11	½
45	38	11⅝	¼	¾
46	39	10	½	10
47	40	8⅜	¾	⅛
48	41	6⅞	12	⅜
49	42	5¼		
50	43	3⅝		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1½
2..		2⅞
3..		4⅜
4..		5¾
5..		7¼
6..		8⅝
7..		10⅛
8..		11½
9..	1	1
10..		2½
11..		3⅞
12..		5⅜
13..		6¾
14..		8¼
15..		9⅝
16..		11⅛
17..	2	0½
18..		2
19..		3⅜
20..		4⅞
21..		6⅜
22..		7¾
23..		9¼
24..		10⅝
25..	3	0⅛
26..		1½
27..		3
28..		4⅜
29..		5⅞
30..		7⅜
31..		8¾
32..		10¼
33..		11⅝
34..	4	1⅛
35..		2½
36..		4
37..		5⅜
38..		6⅞
39..		8⅜
40..		9¾
41..		11¼
42..	5	0⅝
43..		2⅛
44..		3½
45..		5
46..		6⅜
47..		7⅞
48..		9⅜

12½ & 12 — 46¼°

EXPLANATION

Common Rafter

Width of building...........21'2¾"
Find length of Common Rafter.
Answer:
Under **Span, ft.** find 21' = 15' 2"
" " **in.** " 2¾" = 2"

Total length Common Rft. 15' 4"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 21'2¾", Hip rafter is 18'7⅝" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 31" apart are 3'8¾" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 12½- 12
Level. 12 - 12½

Hip Rafter
Plumb 12½- 17
Level. 17 - 12½
Side.. 10½- 8½
Backing 12½- 21⅛
Set bevel to last named.

Jack Rafter
Plumb 12½- 12
Level. 12 - 12½
Side.. 17⅜- 12

Purlin Rafter
Roof Sheathing
Plumb 12½- 17⅜
Cross. 12 - 17⅜

Valley Shingles
Cross. 12 - 17⅜
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 12½- 12
Mitre. 17⅜- 12

Bisection of
12½- 12=10⅛- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 8⅝	¼	⅛
2	1. 5⅜	½	⅜
3	2. 2	¾	½
4	2.10⅝	1	¾
5	3. 7⅜	¼	⅞
6	4. 4	½	1⅛
7	5. 0⅝	¾	¼
8	5. 9⅜	2	½
9	6. 6	¼	⅝
10	7. 2⅝	½	¾
11	7.11¼	¾	2
12	8. 8	3	⅛
13	9. 4⅝	¼	⅜
14	10. 1¼	½	½
15	10.10	¾	¾
16	11. 6⅝	4	⅞
17	12. 3¼	¼	3⅛
18	13. 0	½	¼
19	13. 8⅝	¾	⅜
20	14. 5¼	5	⅝
21	15. 2	¼	¾
22	15.10⅝	½	4
23	16. 7¼	¾	⅛
24	17. 3⅞	6	⅜
25	18. 0⅝	¼	½
26	18. 9¼	½	¾
27	19. 5⅞	¾	7/3
28	20. 2⅝	7	5
29	20.11¼	¼	¼
30	21. 7⅞	½	⅜
31	22. 4⅝	¾	⅝
32	23. 1¼	8	¾
33	23. 9⅞	¼	6
34	24. 6⅝	½	⅛
35	25. 3¼	¾	⅜
36	25.11⅞	9	½
37	26. 8⅝	¼	⅝
38	27. 5¼	½	⅞
39	28. 1⅞	¾	7
40	28.10½	10	¼
41	29. 7¼	¼	⅜
42	30. 3⅞	½	⅝
43	31. 0½	¾	¾
44	31. 9¼	11	8
45	32. 5⅞	¼	⅛
46	33. 2½	½	¼
47	33.11¼	¾	½
48	34. 7⅞	12	⅝
49	35. 4½		
50	36. 1¼		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.10½	¼	¼
2	1. 9⅛	½	½
3	2. 7⅝	¾	⅝
4	3. 6⅛	1	⅞
5	4. 4¾	¼	1⅛
6	5. 3¼	½	⅜
7	6. 1¾	¾	½
8	7. 0¼	2	¾
9	7.10⅞	¼	2
10	8. 9⅜	½	¼
11	9. 7⅞	¾	⅜
12	10. 6½	3	⅝
13	11. 5	¼	⅞
14	12. 3½	½	3⅛
15	13. 2⅛	¾	¼
16	14. 0⅝	4	½
17	14.11⅛	¼	¾
18	15. 9¾	½	4
19	16. 8¼	¾	⅛
20	17. 6¾	5	⅜
21	18. 5¼	¼	⅝
22	19. 3⅞	½	⅞
23	20. 2⅜	¾	5
24	21. 0⅞	6	¼
25	21.11½	¼	½
26	22.10	½	¾
27	23. 8½	¾	⅞
28	24. 7⅛	7	6⅛
29	25. 5⅝	¼	⅜
30	26. 4⅛	½	⅝
31	27. 2¾	¾	¾
32	28. 1¼	8	7
33	28.11¾	¼	¼
34	29.10⅜	½	½
35	30. 8⅞	¾	⅝
36	31. 7⅜	9	⅞
37	32. 5⅞	¼	8⅛
38	33. 4½	½	⅜
39	34. 3	¾	⅝
40	35. 1½	10	¾
41	36. 0⅛	¼	9
42	36.10⅝	½	¼
43	37. 9⅛	¾	½
44	38. 7¾	11	⅝
45	39. 6¼	¼	⅞
46	40. 4¾	½	10⅛
47	41. 3⅜	¾	⅜
48	42. 1⅞	12	½
49	43. 0⅜		
50	43.10⅞		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1½
2..		3
3..		4⅜
4..		5⅞
5..		7⅜
6..		8⅞
7..		10⅜
8..		11¾
9..	1	1¼
10..		2¾
11..		4¼
12..		5¾
13..		7⅛
14..		8⅝
15..		10⅛
16..		11⅝
17..	2	1⅛
18..		2½
19..		4
20..		5½
21..		7
22..		8⅜
23..		9⅞
24..		11⅜
25..	3	0⅞
26..		2⅜
27 .		3¾
28..		5¼
29..		6¾
30..		8¼
31..		9¾
32..		11⅛
33..	4	0⅝
34..		2⅛
35..		3⅝
36..		5⅛
37..		6½
38..		8
39..		9½
40..		11
41..	5	0½
42..		1⅞
43..		3⅜
44..		4⅞
45..		6⅜
46..		7⅞
47..		9¼
48..		10¾

13 & 12 — 47¼°

EXPLANATION

Common Rafter

Width of building...........13′2¼″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find **13′ = 9′ 7″**
" " **in.** " **2¼″ = 1⅝″**

Total length Common Rft. 9′ 8⅝″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 13′2¼″, Hip rafter is 11′9″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 26″ apart are 3′2⅜″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 13 - 12
Level. 12 - 13

Hip Rafter

Plumb 13 - 17
Level. 17 - 13
Side.. 10¾- 8½
Backing13 - 21⅜
Set bevel to last named.

Jack Rafter

Plumb 13 - 12
Level. 12 - 13
Side.. 17¾- 12

Purlin Rafter
Roof Sheathing

Plumb 13 - 17¾
Cross. 12 - 17¾

Valley Shingles

Cross. 12 - 17¾
Set bevel on butt end.

Mitre-Box Cuts for Gable Mould

Plumb 13 - 12
Mitre. 17¾- 12

Bisection of
13- 12=10½- 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		8⅞	¼	⅛
2	1	5¾	½	⅜
3	2	2½	¾	½
4	2	11⅜	1	¾
5	3	8¼	¼	⅞
6	4	5⅛	½	1⅛
7	5	1⅞	¾	¼
8	5	10¾	2	½
9	6	7⅝	¼	⅝
10	7	4½	½	⅞
11	8	1¼	¾	2
12	8	10⅛	3	¼
13	9	7	¼	⅜
14	10	3⅞	½	⅝
15	11	0¾	¾	¾
16	11	9½	4	3
17	12	6⅜	¼	⅛
18	13	3¼	½	⅜
19	14	0⅛	¾	½
20	14	8⅞	5	⅝
21	15	5¾	¼	⅞
22	16	2⅝	½	4
23	16	11½	¾	¼
24	17	8⅜	6	⅜
25	18	5⅛	¼	⅝
26	19	2	½	¾
27	19	10⅞	¾	5
28	20	7¾	7	⅛
29	21	4½	¼	⅜
30	22	1⅜	½	½
31	22	10¼	¾	¾
32	23	7⅛	8	⅞
33	24	3⅞	¼	6⅛
34	25	0¾	½	¼
35	25	9⅝	¾	½
36	26	6½	9	⅝
37	27	3¼	¼	⅞
38	28	0⅛	½	7
39	28	9	¾	⅛
40	29	5⅞	10	⅜
41	30	2⅝	¼	½
42	30	11½	½	¾
43	31	8⅜	¾	⅞
44	32	5¼	11	8⅛
45	33	2⅛	¼	¼
46	33	10⅞	½	½
47	34	7¾	¾	⅝
48	35	4⅝	12	⅝
49	36	1½		
50	36	10¼		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		10¾	¼	¼
2	1	9⅜	½	½
3	2	8⅛	¾	⅝
4	3	6¾	1	⅞
5	4	5½	¼	1⅛
6	5	4⅛	½	⅜
7	6	2⅞	¾	½
8	7	1½	2	¾
9	8	0¼	¼	2
10	8	10⅞	½	¼
11	9	9⅝	¾	½
12	10	8¼	3	⅝
13	11	7	¼	⅞
14	12	5⅝	½	3⅛
15	13	4⅜	¾	⅜
16	14	3	4	½
17	15	1¾	¼	¾
18	16	0⅜	½	4
19	16	11⅛	¾	¼
20	17	9¾	5	½
21	18	8½	¼	⅝
22	19	7⅛	½	⅞
23	20	5⅞	¾	5⅛
24	21	4½	6	⅜
25	22	3¼	¼	⅝
26	23	1⅞	½	¾
27	24	0⅝	¾	6
28	24	11¼	7	¼
29	25	10	¼	½
30	26	8⅝	½	⅝
31	27	7⅜	¾	⅞
32	28	6	8	7⅛
33	29	4¾	¼	⅜
34	30	3⅜	½	⅝
35	31	2⅛	¾	¾
36	32	0¾	9	8
37	32	11½	¼	¼
38	33	10⅛	½	½
39	34	8⅞	¾	⅝
40	35	7½	10	⅞
41	36	6¼	¼	9⅛
42	37	4⅞	½	⅜
43	38	3⅝	¾	⅝
44	39	2¼	11	¾
45	40	1	¼	10
46	40	11⅝	½	¼
47	41	10⅜	¾	½
48	42	9	12	⅝
49	43	7¾		
50	44	6⅜		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1½
2..		3
3..		4½
4..		6
5..		7½
6..		9
7..		10½
8..	1	0
9..		1½
10..		3
11..		4½
12..		6⅛
13..		7⅝
14..		9⅛
15..		10⅝
16..	2	0⅛
17..		1⅝
18..		3⅛
19..		4⅝
20..		6⅛
21..		7⅝
22..		9⅛
23..		10⅝
24..	3	0⅛
25..		1⅝
26..		3⅛
27..		4⅝
28..		6⅛
29..		7⅝
30..		9⅛
31..		10⅝
32..	4	0⅛
33..		1⅝
34..		3⅛
35..		4⅝
36..		6¼
37..		7¾
38..		9¼
39..		10¾
40	5	0¼
41 .		1¾
42..		3¼
43..		4¾
44..		6¼
45..		7¾
46..		9¼
47..		10¾
48..	6	0¼

13½ & 12 — 48½°

EXPLANATION

Common Rafter

Width of building...........32′1¼″
Find length of Common Rafter.

Answer:

Under Span, ft. find 32′ = 24′ 1″
" " in. " 1¼″ = 1″

Total length Common Rft. 24′ 2″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the **span.** Proceed as before.

Tables give full length. **Allow for** half thickness of ridge.

Spans over 50′, as 60′, **add lengths** of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is **32′1¼″.** Hip rafter is 29′0⅛″ long. **Measure length of Hip on center of top edge.** If Hip is unbacked (top edge square), see Index. If **edge is** backed (beveled), see **Index.**

Allow for half thickness **of ridge.**

Jack Rafters

Spaced 35″ apart are **4′4⅝″** different in length. Measure **length** on center of top edge. **Cut short** equal to half thickness **of hip.**

CUTS FOR STEEL SQUARE.

The first figure is always **the cut.**

Common Rafter
Plumb 13½- 12
Level. 12 - 13½

Hip Rafter
Plumb 13½- 17
Level. 17 - 13½
Side.. 10⅞- 8½
Backing 13½- 21⅝
Set bevel to last named.

Jack Rafter
Plumb 13½- 12
Level. 12 - 13½
Side.. 18⅛- 12

Purlin Rafter Roof Sheathing
Plumb 13½- 18⅛
Cross. 12 - 18⅛

Valley Shingles
Cross. 12 - 18⅛
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Mitre. 18⅛- 12
Plumb 13½- 12

Bisection of
13½- 12=10¾- 24

For full explanation see **Index.**

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9	¼	¼
2	1. 6⅛	½	⅜
3	2. 3⅛	¾	⅝
4	3. 0⅛	1	¾
5	3. 9⅛	¼	1
6	4. 6¼	½	⅛
7	5. 3¼	¾	⅜
8	6. 0¼	2	½
9	6. 9¼	¼	¾
10	7. 6⅜	½	⅞
11	8. 3⅜	¾	2⅛
12	9. 0⅜	3	¼
13	9. 9⅜	¼	½
14	10. 6⅜	½	⅝
15	11. 3½	¾	⅞
16	12. 0½	4	3
17	12. 9½	¼	¼
18	13. 6½	½	⅜
19	14. 3⅝	¾	⅝
20	15. 0⅝	5	¾
21	15. 9⅝	¼	4
22	16. 6⅝	½	⅛
23	17. 3¾	¾	⅜
24	18. 0¾	6	½
25	18. 9¾	¼	¾
26	19. 6¾	½	⅞
27	20. 3⅞	¾	5⅛
28	21. 0⅞	7	¼
29	21. 9⅞	¼	½
30	22. 6⅞	½	⅝
31	23. 4	¾	⅞
32	24. 1	8	6
33	24. 10	¼	¼
34	25. 7	½	⅜
35	26. 4⅛	¾	⅝
36	27. 1⅛	9	¾
37	27. 10⅛	¼	7
38	28. 7⅛	½	⅛
39	29. 4¼	¾	⅜
40	30. 1¼	10	½
41	30. 10¼	¼	¾
42	31. 7¼	½	⅞
43	32. 4⅜	¾	8⅛
44	33. 1⅜	11	¼
45	33. 10⅜	¼	½
46	34. 7⅜	½	⅝
47	35. 4½	¾	⅞
48	36. 1½	12	9
49	36. 10½		
50	37. 7½		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 10⅞	¼	¼
2	1. 9⅝	½	½
3	2. 8½	¾	⅝
4	3. 7⅜	1	⅞
5	4. 6¼	¼	1⅛
6	5. 5	½	⅜
7	6. 3⅞	¾	⅝
8	7. 2¾	2	¾
9	8. 1⅝	¼	2
10	9. 0⅜	½	¼
11	9. 11¼	¾	½
12	10. 10⅛	3	¾
13	11. 9	¼	3
14	12. 7¾	½	⅛
15	13. 6⅝	¾	⅜
16	14. 5½	4	⅝
17	15. 4⅜	¼	⅞
18	16. 3⅛	½	4⅛
19	17. 2	¾	¼
20	18. 0⅞	5	½
21	18. 11¾	¼	¾
22	19. 10½	½	5
23	20. 9⅜	¾	¼
24	21. 8¼	6	⅜
25	22. 7⅛	¼	⅝
26	23. 5⅞	½	⅞
27	24. 4¾	¾	6⅛
28	25. 3⅝	7	⅜
29	26. 2⅜	¼	½
30	27. 1¼	½	¾
31	28. 0⅛	¾	7
32	28. 11	8	¼
33	29. 9¾	¼	½
34	30. 8⅝	½	⅝
35	31. 7½	¾	⅞
36	32. 6⅜	9	8⅛
37	33. 5⅛	¼	⅜
38	34. 4	½	⅝
39	35. 2⅞	¾	¾
40	36. 1¾	10	9
41	37. 0½	¼	¼
42	37. 11⅜	½	½
43	38. 10¼	¾	¾
44	39. 9⅛	11	⅞
45	40. 7⅞	¼	10⅛
46	41. 6¾	½	⅜
47	42. 5⅝	¾	⅝
48	43. 4½	12	¾
49	44. 3¼		
50	45. 2⅛		

JACK RAFTER

Spaced In.	Length Ft.	Length In.
1..		1½
2..		3⅛
3..		4⅝
4..		6⅛
5..		7⅝
6..		9¼
7..		10¾
8..	1	0¼
9..		1⅞
10..		3⅜
11..		4⅞
12..		6½
13..		8
14..		9½
15..		11
16..	2	0⅝
17..		2⅛
18..		3⅝
19..		5¼
20..		6¾
21..		8¼
22..		9⅞
23..		11⅜
24..	3	0⅞
25..		2⅜
26..		4
27..		5½
28..		7
29..		8⅝
30..		10⅛
31..		11⅝
32..	4	1⅛
33..		2¾
34..		4¼
35..		5¾
36..		7⅜
37..		8⅞
38..		10⅜
39..	5	0
40..		1½
41..		3
42..		4½
43..		6⅛
44..		7⅝
45..		9⅛
46..		10⅝
47..	6	0¼
48..		1¾

14 & 12 — 49½°

EXPLANATION

Common Rafter

Width of building...........41′5½″
Find length of Common Rafter.
Answer:
Under Span, ft. find 41′ = 31′ 6″
" " in. " 5½″ = 4¼″

Total length Common Rft. 31′10¼″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 41′5½″, Hip rafter is 38′0″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 38″ apart are 4′10⅜″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 14 - 12
Level. 12 - 14

Hip Rafter
Plumb 14 - 17
Level. 17 - 14
Side.. 11 - 8½
Backing 14 - 22
Set bevel to last named.

Jack Rafter
Plumb 14 - 12
Level. 12 - 14
Side.. 18½- 12

Purlin Rafter Roof Sheathing
Plumb 14 - 18½
Cross. 12 - 18½

Valley Shingles
Cross. 12 - 18½
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 14 - 12
Mitre. 18½- 12

Bisection of
14- 12=11- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9¼	¼	¼
2	1. 6½	½	⅜
3	2. 3⅝	¾	⅝
4	3. 0⅞	1	¾
5	3.10⅛	¼	1
6	4. 7⅜	½	⅛
7	5. 4½	¾	⅜
8	6. 1¾	2	½
9	6.11	¼	¾
10	7. 8¼	½	⅞
11	8. 5⅜	¾	2⅛
12	9. 2⅝	3	¼
13	9.11⅞	¼	½
14	10. 9⅛	½	¾
15	11. 6¼	¾	⅞
16	12. 3½	4	3⅛
17	13. 0¾	¼	¼
18	13.10	½	½
19	14. 7⅛	¾	⅝
20	15. 4⅜	5	⅞
21	16. 1⅝	¼	4
22	16.10⅞	½	¼
23	17. 8	¾	⅜
24	18. 5¼	6	⅝
25	19. 2½	¼	¾
26	19.11¾	½	5
27	20. 8⅞	¾	⅛
28	21. 6⅛	7	⅜
29	22. 3⅜	¼	⅝
30	23. 0⅝	½	¾
31	23. 9¾	¾	6
32	24. 7	8	⅛
33	25. 4¼	¼	⅜
34	26. 1½	½	½
35	26.10⅝	¾	¾
36	27. 7⅞	9	⅞
37	28. 5⅛	¼	7⅛
38	29. 2⅜	½	¼
39	29.11½	¾	½
40	30. 8¾	10	⅝
41	31. 6	¼	⅞
42	32. 3⅛	½	8⅛
43	33. 0⅜	¾	¼
44	33. 9⅝	11	½
45	34. 6⅞	¼	⅝
46	35. 4⅛	½	⅞
47	36. 1⅜	¾	9
48	36.10½	12	¼
49	37. 7¾		
50	38. 5		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.11	¼	¼
2	1.10	½	½
3	2. 9	¾	¾
4	3. 8	1	⅞
5	4. 7	¼	1⅛
6	5. 6	½	⅜
7	6. 5	¾	⅝
8	7. 4	2	⅞
9	8. 3	¼	2
10	9. 2	½	¼
11	10. 1	¾	½
12	11. 0	3	¾
13	11.11	¼	3
14	12.10	½	¼
15	13. 9	¾	⅜
16	14. 8	4	⅝
17	15. 7	¼	⅞
18	16. 6	½	4⅛
19	17. 5	¾	⅜
20	18. 4	5	⅝
21	19. 3	¼	¾
22	20. 2	½	5
23	21. 1	¾	¼
24	22. 0	6	½
25	22.11	¼	¾
26	23.10	½	6
27	24. 9	¾	⅛
28	25. 8	7	⅜
29	26. 7	¼	⅝
30	27. 6	½	⅞
31	28. 5	¾	7⅛
32	29. 4	8	⅜
33	30. 3	¼	½
34	31. 2	½	¾
35	32. 1	¾	8
36	33. 0	9	¼
37	33.11	¼	½
38	34.10	½	¾
39	35. 9	¾	⅞
40	36. 8	10	9⅛
41	37. 7	¼	⅜
42	38. 6	½	⅝
43	39. 5	¾	⅞
44	40. 4	11	10⅛
45	41. 3	¼	¼
46	42. 2	½	½
47	43. 1	¾	¾
48	44. 0	12	11
49	44.11		
50	45.10		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1⅝
2..		3⅛
3..		4¾
4..		6¼
5..		7⅞
6..		9⅜
7..		11
8..	1	0½
9..		2⅛
10..		3⅝
11..		5¼
12..		6⅞
13..		8⅜
14..		10
15..		11½
16..	2	1⅛
17..		2⅝
18..		4¼
19..		5¾
20..		7⅜
21..		9
22..		10½
23..	3	0⅛
24..		1⅝
25..		3¼
26..		4¾
27..		6⅜
28..		7⅞
29..		9½
30..		11
31..	4	0⅝
32..		2¼
33..		3¾
34..		5⅜
35..		6⅞
36..		8½
37..		10
38..		11⅝
39..	5	1⅛
40..		2¾
41..		4⅜
42..		5⅞
43..		7½
44..		9
45..		10⅝
46..	6	0⅛
47..		1¾
48..		3¼

14½ & 12 — 50½°

EXPLANATION

Common Rafter

Width of building...........17'3¼"
Find length of Common Rafter.

Answer:

Under **Span**, ft. find 17' = 13' 4"
" " in. " 3¼" = 2½"

Total length Common Rft. 13' 6½"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 17'3¼", Hip rafter is 16'0¾" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 36" apart are 4'8½" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 14½- 12
Level. 12 - 14½

Hip Rafter

Plumb 14½- 17
Level. 17 - 14½
Side.. 11⅛- 8½
Backing 14½- 22⅜
Set bevel to last named.

Jack Rafter

Plumb 14½- 12
Level. 12 - 14½
Side.. 18⅞- 12

Purlin Rafter Roof Sheathing

Plumb 14½- 18⅞
Cross. 12 - 18⅞

Valley Shingles

Cross. 12 - 18⅞
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 14½- 12
Mitre. 18⅞- 12

Bisection of
14½- 12=11¼- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9⅜	¼	¼
2	1. 6⅞	½	⅜
3	2. 4¼	¾	⅝
4	3. 1⅝	1	¾
5	3. 11	¼	1
6	4. 8½	½	⅛
7	5. 5⅞	¾	⅜
8	6. 3¼	2	⅝
9	7. 0¾	¼	¾
10	7. 10⅛	½	2
11	8. 7½	¾	⅛
12	9. 4⅞	3	⅜
13	10. 2⅜	¼	½
14	10. 11¾	½	¾
15	11. 9⅛	¾	3
16	12. 6⅝	4	⅛
17	13. 4	¼	⅜
18	14. 1⅜	½	½
19	14. 10¾	¾	¾
20	15. 8¼	5	⅞
21	16. 5⅝	¼	4⅛
22	17. 3	½	¼
23	18. 0½	¾	½
24	18. 9⅞	6	¾
25	19. 7¼	¼	⅞
26	20. 4⅝	½	5⅛
27	21. 2⅛	¾	¼
28	21. 11½	7	½
29	22. 8⅞	¼	⅝
30	23. 6⅜	½	⅞
31	24. 3¾	¾	6⅛
32	25. 1⅛	8	¼
33	25. 10½	¼	½
34	26. 8	½	⅝
35	27. 5⅜	¾	⅞
36	28. 2¾	9	7
37	29. 0¼	¼	¼
38	29. 9⅝	½	½
39	30. 7	¾	⅝
40	31. 4⅜	10	⅞
41	32. 1⅞	¼	8
42	32. 11¼	½	¼
43	33. 8⅝	¾	½
44	34. 6⅛	11	⅝
45	35. 3½	¼	⅞
46	36. 0⅞	½	9
47	36. 10¼	¾	¼
48	37. 7¾	12	⅜
49	38. 5⅛		
50	39. 2½		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 11⅛	¼	¼
2	1. 10⅜	½	½
3	2. 9½	¾	¾
4	3. 8⅝	1	⅞
5	4. 7¾	¼	1⅛
6	5. 7	½	⅜
7	6. 6⅛	¾	⅝
8	7. 5¼	2	⅞
9	8. 4½	¼	2⅛
10	9. 3⅝	½	⅜
11	10. 2¾	¾	½
12	11. 1⅞	3	¾
13	12. 1⅛	¼	3
14	13. 0¼	½	¼
15	13. 11⅜	¾	½
16	14. 10⅝	4	¾
17	15. 9¾	¼	4
18	16. 8⅞	½	⅛
19	17. 8	¾	⅜
20	18. 7¼	5	⅝
21	19. 6⅜	¼	⅞
22	20. 5½	½	5⅛
23	21. 4¾	¾	⅜
24	22. 3⅞	6	⅝
25	23. 3	¼	⅞
26	24. 2⅛	½	6
27	25. 1⅜	¾	¼
28	26. 0½	7	½
29	26. 11⅝	¼	¾
30	27. 10⅞	½	7
31	28. 10	¾	¼
32	29. 9⅛	8	½
33	30. 8⅜	¼	⅝
34	31. 7½	½	⅞
35	32. 6⅝	¾	8⅛
36	33. 5¾	9	⅜
37	34. 5	¼	⅝
38	35. 4⅛	½	⅞
39	36. 3¼	¾	9⅛
40	37. 2⅜	10	¼
41	38. 1⅝	¼	½
42	39. 0¾	½	¾
43	39. 11⅞	¾	10
44	40. 11⅛	11	¼
45	41. 10¼	¼	½
46	42. 9⅜	½	¾
47	43. 8½	¾	⅞
48	44. 7¾	12	11⅛
49	45. 6⅞		
50	46. 6		

JACK RAFTER

Spaced In.	Length Ft.	In.
1		1⅝
2		3¼
3		4¾
4		6⅜
5		8
6		9⅝
7		11¼
8	1	0¾
9		2⅜
10		4
11		5⅝
12		7¼
13		8⅞
14		10⅜
15	2	0
16		1⅝
17		3¼
18		4⅞
19		6⅜
20		8
21		9⅝
22		11¼
23	3	0⅞
24		2⅜
25		4
26		5⅝
27		7¼
28		8⅞
29		10⅜
30	4	0
31		1⅝
32		3¼
33		4⅞
34		6⅜
35		8
36		9⅝
37		11¼
38	5	0⅞
39		2½
40		4
41		5⅝
42		7¼
43		8⅞
44		10½
45	6	0
46		1⅝
47		3¼
48		4⅞

15 & 12 — 51½°

EXPLANATION

Common Rafter

Width of building...........43′3¾″
Find length of Common Rafter.

Answer:

Under **Span**, ft. find 43′ = 34′ 5″
" " in. " 3¾″ = 3″

Total length Common Rft. 34′ 8″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 43′3¾″, Hip rafter is 40′10½″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 32″ apart are 4′3¼″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 15 - 12
Level. 12 · 15

Hip Rafter
Plumb 15 - 17
Level. 17 - 15
Side.. 11⅜ - 8½
Backing 15 - 22⅝
Set bevel to last named.

Jack Rafter
Plumb 15 - 12
Level. 12 - 15
Side.. 19¼ - 12

Purlin Rafter Roof Sheathing
Plumb 15 - 19¼
Cross. 12 - 19¼

Valley Shingles
Cross. 12 - 19¼
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 15 - 12
Mitre. 19¼ - 12

Bisection of
15 - 12 = 11½ - 24

For full explanation see Index.

COMMON RAFTER				HIP OR VALLEY RAFTER			
Span Ft.	Length Ft. In.	Span In.	Lgth. In.	Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9⅝	¼	¼	1	.11⅜	¼	¼
2	1. 7¼	½	⅜	2	1.10⅝	½	½
3	2. 4⅞	¾	⅝	3	2.10	¾	¾
4	3. 2⅜	1	¾	4	3. 9¼	1	1
5	4. 0	¼	1	5	4. 8⅝	¼	⅛
6	4. 9⅝	½	¼	6	5. 8	½	⅜
7	5. 7¼	¾	⅜	7	6. 7¼	¾	⅝
8	6. 4⅞	2	⅝	8	7. 6⅝	2	⅞
9	7. 2½	¼	¾	9	8. 5⅞	¼	2⅛
10	8. 0	½	2	10	9. 5¼	½	⅜
11	8. 9⅝	¾	¼	11	10. 4⅝	¾	⅝
12	9. 7¼	3	⅜	12	11. 3⅞	3	⅞
13	10. 4⅞	¼	⅝	13	12. 3¼	¼	3⅛
14	11. 2½	½	¾	14	13. 2½	½	¼
15	12. 0⅛	¾	3	15	14. 1⅞	¾	½
16	12. 9⅝	4	¼	16	15. 1¼	4	¾
17	13. 7¼	¼	⅜	17	16. 0½	¼	4
18	14. 4⅞	½	⅝	18	16.11⅞	½	¼
19	15. 2½	¾	¾	19	17.11⅛	¾	½
20	16. 0⅛	5	4	20	18.10½	5	¾
21	16. 9¾	¼	¼	21	19. 9⅞	¼	5
22	17. 7⅜	½	⅜	22	20. 9⅛	½	¼
23	18. 4⅞	¾	⅝	23	21. 8½	¾	⅜
24	19. 2½	6	¾	24	22. 7¾	6	⅝
25	20. 0⅛	¼	5	25	23. 7⅛	¼	⅞
26	20. 9¾	½	¼	26	24. 6½	½	6⅛
27	21. 7⅜	¾	⅜	27	25. 5¾	¾	⅜
28	22. 4⅞	7	⅝	28	26. 5⅛	7	⅝
29	23. 2½	¼	¾	29	27. 4⅜	¼	⅞
30	24. 0⅛	½	6	30	28. 3¾	½	7⅛
31	24. 9¾	¾	¼	31	29. 3⅛	¾	⅜
32	25. 7⅜	8	⅜	32	30. 2⅜	8	½
33	26. 5	¼	⅝	33	31. 1¾	¼	¾
34	27. 2½	½	¾	34	32. 1	½	8
35	28. 0⅛	¾	7	35	33. 0⅜	¾	¼
36	28. 9¾	9	¼	36	33.11¾	9	½
37	29. 7⅜	¼	⅜	37	34.11	¼	¾
38	30. 5	½	⅝	38	35.10⅜	½	9
39	31. 2⅝	¾	¾	39	36. 9⅝	¾	¼
40	32. 0¼	10	8	40	37. 9	10	½
41	32. 9¾	¼	¼	41	38. 8⅜	¼	⅝
42	33. 7⅜	½	⅜	42	39. 7⅝	½	⅞
43	34. 5	¾	⅝	43	40. 7	¾	10⅛
44	35. 2⅝	11	¾	44	41. 6¼	11	⅜
45	36. 0¼	¼	9	45	42. 5⅝	¼	⅝
46	36. 9⅞	½	¼	46	43. 4⅞	½	⅞
47	37. 7⅜	¾	⅜	47	44. 4¼	¾	11⅛
48	38. 5	12	⅝	48	45. 3⅝	12	⅜
49	39. 2⅝			49	46. 2⅞		
50	40. 0¼			50	47. 2¼		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1⅝
2..		3¼
3..		4⅞
4..		6½
5..		8⅛
6..		9¾
7..		11½
8..	1	1⅛
9..		2¾
10..		4⅜
11..		6
12..		7⅝
13..		9¼
14..		10⅞
15..	2	0½
16..		2⅛
17..		3¾
18..		5⅜
19..		7
20..		8⅝
21..		10¼
22..	3	0
23..		1⅝
24..		3¼
25..		4⅞
26..		6½
27..		8⅛
28..		9¾
29..		11⅜
30..	4	1
31..		2⅝
32..		4¼
33..		5⅞
34..		7½
35..		9⅛
36..		10¾
37..	5	0½
38..		2⅛
39..		3¾
40..		5⅜
41..		7
42..		8⅝
43..		10¼
44..		11⅞
45..	6	1½
46..		3⅛
47..		4¾
48..		6⅜

15½ & 12 — 52¼°

EXPLANATION

Common Rafter

Width of building...........25′5¼″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 25′ = 20′ 5″
" " **In.** " 5¼″ = 4¼″

Total length Common Rft. 20′ 9¼″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 25′5¼″, Hip rafter is 24′4¼″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 27″ apart are 3″8⅛″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 15½- 12
Level. 12 - 15½

Hip Rafter

Plumb 15½- 17
Level. 17 - 15½
Side.. 11½- 8½
Backing15½- 23
Set bevel to last named.

Jack Rafter

Plumb 15½- 12
Level. 12 - 15½
Side.. 19⅝- 12

Purlin Rafter
Roof Sheathing

Plumb 15½- 19⅝
Cross. 12 - 19⅝

Valley Shingles

Cross. 12 - 19⅝
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 15½- 12
Mitre. 19⅝- 12

Bisection of

15½- 12–11¾- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	. 9¾	¼	¼
2	1. 7⅝	½	⅜
3	2. 5⅜	¾	⅝
4	3. 3¼	1	⅞
5	4. 1	¼	1
6	4.10¾	½	¼
7	5. 8⅝	¾	⅜
8	6. 6⅜	2	⅝
9	7. 4¼	¼	⅞
10	8. 2	½	2
11	8.11¾	¾	¼
12	9. 9⅝	3	½
13	10. 7⅜	¼	⅝
14	11. 5¼	½	⅞
15	12. 3	¾	3
16	13. 0⅞	4	¼
17	13.10⅝	¼	½
18	14. 8⅜	½	⅝
19	15. 6¼	¾	⅞
20	16. 4	5	4⅛
21	17. 1⅞	¼	¼
22	17.11⅝	½	½
23	18. 9⅜	¾	¾
24	19. 7¼	6	⅞
25	20. 5	¼	5⅛
26	21. 2⅞	½	¼
27	22. 0⅝	¾	½
28	22.10⅜	7	¾
29	23. 8¼	¼	⅞
30	24. 6	½	6⅛
31	25. 3⅞	¾	⅜
32	26. 1⅝	8	½
33	26.11⅜	¼	¾
34	27. 9¼	½	⅞
35	28. 7	¾	7⅛
36	29. 4⅞	9	⅜
37	30. 2⅝	¼	½
38	31. 0½	½	¾
39	31.10¼	¾	8
40	32. 8	10	⅛
41	33. 5⅞	¼	⅜
42	34. 3⅝	½	⅝
43	35. 1½	¾	¾
44	35.11¼	11	9
45	36. 9	¼	⅛
46	37. 6⅞	½	⅜
47	38. 4⅝	¾	⅝
48	39. 2½	12	¾
49	40. 0¼		
50	40.10		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.11½	¼	¼
2	1.11	½	½
3	2.10½	¾	¾
4	3.10	1	1
5	4. 9½	¼	¼
6	5. 9	½	⅜
7	6. 8½	¾	⅝
8	7. 7⅞	2	⅞
9	8. 7⅜	¼	2⅛
10	9. 6⅞	½	⅜
11	10. 6⅜	¾	⅝
12	11. 5⅞	3	⅞
13	12. 5⅜	¼	3⅛
14	13. 4⅞	½	⅜
15	14. 4⅜	¾	⅝
16	15. 3⅞	4	⅞
17	16. 3⅜	¼	4⅛
18	17. 2⅞	½	¼
19	18. 2⅜	¾	½
20	19. 1⅞	5	¾
21	20. 1⅜	¼	5
22	21. 0⅞	½	¼
23	22. 0⅜	¾	½
24	22.11¾	6	¾
25	23.11¼	¼	6
26	24.10¾	½	¼
27	25.10¼	¾	½
28	26. 9¾	7	¾
29	27. 9¼	¼	7
30	28. 8¾	½	⅛
31	29. 8¼	¾	⅜
32	30. 7¾	8	⅝
33	31. 7¼	¼	⅞
34	32. 6¾	½	8⅛
35	33. 6¼	¾	⅜
36	34. 5¾	9	⅝
37	35. 5¼	¼	⅞
38	36. 4¾	½	9⅛
39	37. 4¼	¾	⅜
40	38. 3⅝	10	⅝
41	39. 3⅛	¼	⅞
42	40. 2⅝	½	10
43	41. 2⅛	¾	¼
44	42. 1⅝	11	½
45	43. 1⅛	¼	¾
46	44. 0⅝	½	11
47	45. 0⅛	¾	¼
48	45.11⅝	12	½
49	46.11⅛		
50	47.10⅝		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1⅝
2..		3⅜
3..		5
4..		6⅝
5		8⅜
6 .		10
7..		11⅝
8..	1	1⅜
9..		3
10..		4⅝
11..		6⅜
12..		8
13..		9⅝
14..		11⅜
15..	2	1
16..		2⅝
17 .		4⅜
18..		6
19..		7⅝
20..		9⅜
21..		11
22..	3	0⅝
23..		2⅜
24..		4
25..		5⅝
26..		7⅜
27..		9
28..		10⅝
29..	4	0⅜
30..		2
31..		3⅝
32..		5⅜
33..		7
34..		8⅝
35..		10⅜
36..	5	0
37..		1⅝
38..		3⅜
39..		5
40..		6⅝
41..		8⅜
42..		10
43..		11⅝
44..	6	1⅜
45..		3
46..		4⅝
47..		6⅜
48..		8

16 & 12 — 53¼°

EXPLANATION

Common Rafter

Width of building...........30'10¼"

Find length of Common Rafter.

Answer:

Under **Span**, ft. find 30' = 25' 0"
" " in. " 10¼" = 8½"

Total length Common Rft. 25' 8½"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 30'10¼", Hip rafter is 29'11⅞" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 32" apart are 4'5⅜" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 16 - 12
Level. 12 - 16

Hip Rafter

Plumb 16 - 17
Level. 17 - 16
Side.. 11⅝ - 8½
Backing 16 - 23⅜
Set bevel to last named.

Jack Rafter

Plumb 16 - 12
Level. 12 - 16
Side.. 20 - 12

Purlin Rafter Roof Sheathing

Plumb 16 - 20
Cross. 12 - 20

Valley Shingles

Cross. 12 - 20
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 16 - 12
Mitre. 20 - 12

Bisection of
16- 12=11⅞- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.10	¼	¼
2	1. 8	½	⅜
3	2. 6	¾	⅝
4	3. 4	1	⅞
5	4. 2	¼	1
6	5. 0	½	¼
7	5.10	¾	½
8	6. 8	2	⅝
9	7. 6	¼	⅞
10	8. 4	½	2⅛
11	9. 2	¾	¼
12	10. 0	3	½
13	10.10	¼	¾
14	11. 8	½	⅞
15	12. 6	¾	3⅛
16	13. 4	4	⅜
17	14. 2	¼	½
18	15. 0	½	¾
19	15.10	¾	4
20	16. 8	5	⅛
21	17. 6	¼	⅜
22	18. 4	½	⅝
23	19. 2	¾	¾
24	20. 0	6	5
25	20.10	¼	¼
26	21. 8	½	⅜
27	22. 6	¾	⅝
28	23. 4	7	⅞
29	24. 2	¼	6
30	25. 0	½	¼
31	25.10	¾	½
32	26. 8	8	⅝
33	27. 6	¼	⅞
34	28. 4	½	7⅛
35	29. 2	¾	¼
36	30. 0	9	½
37	30.10	¼	¾
38	31. 8	½	⅞
39	32. 6	¾	8⅛
40	33. 4	10	⅜
41	34. 2	¼	½
42	35. 0	½	¾
43	35.10	¾	9
44	36. 8	11	⅛
45	37. 6	¼	⅜
46	38. 4	½	⅝
47	39. 2	¾	¾
48	40. 0	12	10
49	40.10		
50	41. 8		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.11⅝	¼	¼
2	1.11⅜	½	½
3	2.11	¾	¾
4	3.10⅝	1	1
5	4.10¼	¼	¼
6	5.10	½	½
7	6. 9⅝	¾	¾
8	7. 9¼	2	2
9	8. 9	¼	¼
10	9. 8⅝	½	⅜
11	10. 8¼	¾	⅝
12	11. 8	3	⅞
13	12. 7⅝	¼	3⅛
14	13. 7¼	½	⅜
15	14. 6⅞	¾	⅝
16	15. 6⅝	4	⅞
17	16. 6¼	¼	4⅛
18	17. 5⅞	½	⅜
19	18. 5⅝	¾	⅝
20	19. 5¼	5	⅞
21	20. 4⅞	¼	5⅛
22	21. 4⅝	½	⅜
23	22. 4¼	¾	⅝
24	23. 3⅞	6	⅞
25	24. 3½	¼	6⅛
26	25. 3¼	½	⅜
27	26. 2⅞	¾	½
28	27. 2½	7	¾
29	28. 2¼	¼	7
30	29. 1⅞	½	¼
31	30. 1½	¾	½
32	31. 1⅛	8	¾
33	32. 0⅞	¼	8
34	33. 0½	½	¼
35	34. 0⅛	¾	½
36	34.11⅞	9	¾
37	35.11½	¼	9
38	36.11⅛	½	¼
39	37.10⅞	¾	½
40	38.10½	10	¾
41	39.10⅛	¼	10
42	40. 9¾	½	¼
43	41. 9½	¾	½
44	42. 9⅛	11	¾
45	43. 8¾	¼	⅞
46	44. 8½	½	11⅛
47	45. 8⅛	¾	⅜
48	46. 7¾	12	⅝
49	47. 7½		
50	48. 7⅛		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1¾
2..		3⅜
3..		5⅛
4..		6¾
5..		8½
6..		10¼
7..		11⅞
8..	1	1⅝
9..		3¼
10..		5
11..		6¾
12..		8⅜
13..		10⅛
14..		11¾
15..	2	1½
16..		3¼
17..		4⅞
18..		6⅝
19..		8¼
20..		10
21..		11¾
22..	3	1⅜
23..		3⅛
24..		4¾
25..		6½
26..		8¼
27..		9⅞
28..		11⅝
29..	4	1¼
30..		3
31..		4¾
32..		6⅜
33..		8⅛
34..		9¾
35..		11½
36..	5	1¼
37..		2⅞
38..		4⅝
39..		6¼
40..		8
41..		9¾
42..		11⅜
43..	6	1⅛
44..		2¾
45..		4½
46..		6¼
47..		7⅞
48..		9⅝

16½ & 12 — 54°

EXPLANATION

Common Rafter

Width of building...........42'3½"
Find length of Common Rafter.

Answer:

Under **Span**, ft. find 42' = 35' 8½"
" " **in.** " 3½" = 3"

Total length Common Rft. 35'11½"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. **Allow for** half thickness of ridge.

Spans over 50', as 60', **add lengths** of 50' & 10' **spans together.**

Hip Rafter

If common rafter span **is 42'3½",** Hip rafter is 41'8½" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 25" apart are 3'6½" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 16½- 12
Level. 12 - 16½

Hip Rafter

Plumb 8¼- 8½
Level. 8½- 8¼
Side.. 11⅞- 8½
Backing 16½- 23⅝
Set bevel to last named.

Jack Rafter

Plumb 16½- 12
Level. 12 - 16½
Side.. 20⅜- 12

Purlin Rafter Roof Sheathing

Plumb 16½- 20⅜
Cross. 12 - 20⅜

Valley Shingles

Cross. 12 - 20⅜
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 16½- 12
Mitre. 20⅜- 12

Bisection of
16½- 12=12⅛- 24

For full explanation **see Index.**

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.10¼	¼	¼
2	1. 8⅜	½	⅜
3	2. 6⅝	¾	⅝
4	3. 4¾	1	⅞
5	4. 3	¼	1⅛
6	5. 1¼	½	¼
7	5.11⅜	¾	½
8	6. 9⅝	2	¾
9	7. 7¾	¼	⅞
10	8. 6	½	2⅛
11	9. 4¼	¾	⅜
12	10. 2⅜	3	½
13	11. 0⅝	¼	¾
14	11.10⅞	½	3
15	12. 9	¾	¼
16	13. 7¼	4	⅜
17	14. 5⅜	¼	⅝
18	15. 3⅝	½	⅞
19	16. 1⅞	¾	4
20	17. 0	5	¼
21	17.10¼	¼	½
22	18. 8⅜	½	⅝
23	19. 6⅝	¾	⅞
24	20. 4⅞	6	5⅛
25	21. 3	¼	⅜
26	22. 1¼	½	½
27	22.11⅜	¾	¾
28	23. 9⅝	7	6
29	24. 7⅞	¼	⅛
30	25. 6	½	⅜
31	26. 4¼	¾	⅝
32	27. 2⅜	8	¾
33	28. 0⅝	¼	7
34	28.10⅞	½	¼
35	29. 9	¾	½
36	30. 7¼	9	⅝
37	31. 5½	¼	⅞
38	32. 3⅝	½	8⅛
39	33. 1⅞	¾	¼
40	34. 0	10	½
41	34.10¼	¼	¾
42	35. 8½	½	⅞
43	36. 6⅝	¾	9⅛
44	37. 4⅞	11	⅜
45	38. 3	¼	⅝
46	39. 1¼	½	¾
47	39.11½	¾	10
48	40. 9⅝	12	¼
49	41. 7⅞		
50	42. 6		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.11⅞	¼	¼
2	1.11⅝	½	½
3	2.11½	¾	¾
4	3.11⅜	1	1
5	4.11⅛	¼	¼
6	5.11	½	½
7	6.10⅞	¾	¾
8	7.10⅝	2	2
9	8.10½	¼	¼
10	9.10⅜	½	½
11	10.10⅛	¾	¾
12	11.10	3	3
13	12. 9⅞	¼	¼
14	13. 9¾	½	½
15	14. 9½	¾	¾
16	15. 9⅜	4	4
17	16. 9¼	¼	¼
18	17. 9	½	½
19	18. 8⅞	¾	¾
20	19. 8¾	5	⅞
21	20. 8½	¼	5⅛
22	21. 8⅜	½	⅜
23	22. 8¼	¾	⅝
24	23. 8	6	⅞
25	24. 7⅞	¼	6⅛
26	25. 7¾	½	⅜
27	26. 7½	¾	⅝
28	27. 7⅜	7	⅞
29	28. 7¼	¼	7⅛
30	29. 7	½	⅜
31	30. 6⅞	¾	⅝
32	31. 6¾	8	⅞
33	32. 6½	¼	8⅛
34	33. 6⅜	½	⅜
35	34. 6¼	¾	⅝
36	35. 6	9	⅞
37	36. 5⅞	¼	9⅛
38	37. 5¾	½	⅜
39	38. 5½	¾	⅝
40	39. 5⅜	10	⅞
41	40. 5¼	¼	10⅛
42	41. 5	½	⅜
43	42. 4⅞	¾	⅝
44	43. 4¾	11	⅞
45	44. 4⅝	¼	11⅛
46	45. 4⅜	½	⅜
47	46. 4¼	¾	⅝
48	47. 4⅛	12	⅞
49	48. 3⅞		
50	49. 3¾		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1¾
2..		3½
3..		5¼
4..		6⅞
5..		8⅝
6..		10⅜
7	1..	0⅛
8 .		1⅞
9 .		3⅝
10 .		5⅜
11 .		7⅛
12..		8¾
13..		10½
14 .	2	0¼
15..		2
16..		3¾
17 .		5½
18..		7¼
19..		9
20..		10⅝
21..	3	0⅜
22..		2⅛
23..		3⅞
24..		5⅝
25..		7⅜
26..		9⅛
27..		10⅞
28..	4	0½
29..		2¼
30..		4
31 .		5¾
32..		7½
33..		9¼
34..		11
35..	5	0¾
36 .		2⅜
37..		4⅛
38..		5⅞
39..		7⅝
40..		9⅜
41..		11⅛
42..	6	0⅞
43..		2⅝
44..		4¼
45..		6
46..		7¾
47..		9½
48..		11¼

17 & 12 — 54¾°

EXPLANATION

Common Rafter

Width of building............32′3″
Find length of Common Rafter.
Answer:
Under **Span, ft.** find 32′ = 27′ 9″
" " **in.** " 3″ = 2⅝″

Total length Common Rft. 27′11⅝″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. **Allow for** half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 32′3″, Hip rafter is 32′3⅜″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 24″ apart are 3′5⅝″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 17 - 12
Level. 12 - 17

Hip Rafter
Plumb 8½ - 8½
Level. 8½ - 8½
Side.. 12 - 8½
Backing 17 - 24
Set bevel to last named.

Jack Rafter
Plumb 17 - 12
Level. 12 - 17
Side.. 20¾ - 12

Purlin Rafter Roof Sheathing
Plumb 17 - 20¾
Cross. 12 - 20¾

Valley Shingles
Cross. 12 - 20¾
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 17 - 12
Mitre. 20¾ - 12

Bisection of
17 - 12 = 12¼ - 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.10⅜	¼	¼
2	1. 8¾	½	⅜
3	2. 7¼	¾	⅝
4	3. 5⅝	1	⅞
5	4. 4	¼	1⅛
6	5. 2⅜	½	¼
7	6. 0⅞	¾	½
8	6.11¼	2	¾
9	7. 9⅝	¼	2
10	8. 8	½	⅛
11	9. 6½	¾	⅜
12	10. 4⅞	3	⅝
13	11. 3¼	¼	⅞
14	12. 1⅝	½	3
15	13. 0⅛	¾	¼
16	13.10½	4	½
17	14. 8⅞	¼	⅝
18	15. 7¼	½	⅞
19	16. 5⅝	¾	4⅛
20	17. 4⅛	5	⅜
21	18. 2½	¼	½
22	19. 0⅞	½	¾
23	19.11¼	¾	5
24	20. 9¾	6	¼
25	21. 8⅛	¼	⅜
26	22. 6½	½	⅝
27	23. 4⅞	¾	⅞
28	24. 3⅜	7	6⅛
29	25. 1¾	¼	¼
30	26. 0⅛	½	½
31	26.10½	¾	¾
32	27. 9	8	7
33	28. 7⅜	¼	⅛
34	29. 5¾	½	⅜
35	30. 4⅛	¾	⅝
36	31. 2½	9	¾
37	32. 1	¼	8
38	32.11⅜	½	¼
39	33. 9¾	¾	½
40	34. 8⅛	10	⅝
41	35. 6⅝	¼	⅞
42	36. 5	½	9⅛
43	37. 3⅜	¾	⅜
44	38. 1¾	11	½
45	39. 0¼	¼	¾
46	39.10⅝	½	10
47	40. 9	¾	¼
48	41. 7⅜	12	⅜
49	42. 5¾		
50	43. 4¼		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 0	¼	¼
2	2. 0	½	½
3	3. 0	¾	¾
4	4. 0	1	1
5	5. 0	¼	¼
6	6. 0⅛	½	½
7	7. 0⅛	¾	¾
8	8. 0⅛	2	2
9	9. 0⅛	¼	¼
10	10. 0⅛	½	½
11	11. 0⅛	¾	¾
12	12. 0⅛	3	3
13	13. 0⅛	¼	¼
14	14. 0⅛	½	½
15	15. 0⅛	¾	¾
16	16. 0⅛	4	4
17	17. 0⅛	¼	¼
18	18. 0¼	½	½
19	19. 0¼	¾	¾
20	20. 0¼	5	5
21	21. 0¼	¼	¼
22	22. 0¼	½	½
23	23. 0¼	¾	¾
24	24. 0¼	6	6
25	25. 0¼	¼	¼
26	26. 0¼	½	½
27	27. 0¼	¾	¾
28	28. 0¼	7	7
29	29. 0¼	¼	¼
30	30. 0⅜	½	½
31	31. 0⅜	¾	¾
32	32. 0⅜	8	8
33	33. 0⅜	¼	¼
34	34. 0⅜	½	½
35	35. 0⅜	¾	¾
36	36. 0⅜	9	9
37	37. 0⅜	¼	¼
38	38. 0⅜	½	½
39	39. 0⅜	¾	¾
40	40. 0⅜	10	10
41	41. 0⅜	¼	¼
42	42. 0⅜	½	½
43	43. 0½	¾	¾
44	44. 0½	11	11
45	45. 0½	¼	¼
46	46. 0½	½	½
47	47. 0½	¾	¾
48	48. 0½	12	12
49	49. 0½		
50	50. 0½		

JACK RAFTER		
Spaced	Length	
In.	Ft.	In.
1..		1¾
2..		3½
3..		5¼
4..		7⅛
5..		8⅞
6..		10⅝
7..	1	0⅜
8..		2⅛
9..		3⅞
10..		5⅝
11..		7½
12..		9¼
13..		11
14..	2	0¾
15..		2½
16..		4¼
17..		6
18..		7⅞
19..		9⅝
20..		11⅜
21..	3	1⅛
22..		2⅞
23..		4⅝
24..		6⅜
25..		8¼
26..		10
27..		11¾
28..	4	1½
29..		3¼
30..		5
31..		6⅞
32..		8⅝
33..		10⅜
34..	5	0⅛
35..		1⅞
36..		3⅝
37..		5⅜
38..		7¼
39..		9
40..		10¾
41..	6	0½
42..		2¼
43..		4
44..		5¾
45..		7⅝
46..		9⅜
47..		11⅛
48..	7	0⅞

17½ & 12 — 55½°

EXPLANATION

Common Rafter

Width of building...........48′2¼″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 48′ = 42′ 5¼″
" " **in.** " 2¼″ = 2″

Total length Common Rft. 42′ 7¼″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 48′2¼″, Hip rafter is 48′11¼″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 37″ apart are 5′5⅜″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 17½- 12
Level. 12 - 17½

Hip Rafter

Plumb 8¾- 8½
Level. 8½- 8¾
Side.. 12¼- 8½
Backing 8¾- 12¼
Set bevel to last named.

Jack Rafter

Plumb 17½- 12
Level. 12 - 17½
Side.. 21¼- 12

Purlin Rafter Roof Sheathing

Plumb 17½- 21¼
Cross. 12 - 21¼

Valley Shingles

Cross. 12 - 21¼
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 17½- 12
Mitre. 21¼- 12

Bisection of
17½- 12=12½- 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1		10⅝	¼	¼
2	1	9¼	½	½
3	2	7⅞	¾	⅝
4	3	6½	**1**	⅞
5	4	5	¼	**1**⅛
6	5	3⅝	½	⅜
7	6	2¼	¾	½
8	7	0⅞	**2**	¾
9	7	11½	¼	**2**
10	8	10⅛	½	¼
11	9	8¾	¾	⅜
12	10	7⅜	**3**	⅝
13	11	5⅞	¼	⅞
14	12	4½	½	**3**⅛
15	13	3⅛	¾	⅜
16	14	1¾	**4**	½
17	15	0⅜	¼	¾
18	15	11	½	**4**
19	16	9⅝	¾	¼
20	17	8¼	**5**	⅜
21	18	6¾	¼	⅝
22	19	5⅜	½	⅞
23	20	4	¾	**5**⅛
24	21	2⅝	**6**	¼
25	22	1¼	¼	½
26	22	11⅞	½	¾
27	23	10½	¾	**6**
28	24	9⅛	**7**	¼
29	25	7⅝	¼	⅜
30	26	6¼	½	⅝
31	27	4⅞	¾	⅞
32	28	3½	**8**	**7**⅛
33	29	2⅛	¼	¼
34	30	0¾	½	½
35	30	11⅜	¾	¾
36	31	10	**9**	**8**
37	32	8½	¼	⅛
38	33	7⅛	½	⅜
39	34	5¾	¾	⅝
40	35	4⅜	**10**	⅞
41	36	3	¼	**9**
42	37	1⅝	½	¼
43	38	0¼	¾	½
44	38	10⅞	**11**	¾
45	39	9⅜	¼	10
46	40	8	½	⅛
47	41	6⅝	¾	⅜
48	42	5¼	**12**	⅝
49	43	3⅞		
50	44	2½		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1	1	0¼	¼	¼
2	2	0⅜	½	½
3	3	0⅝	¾	¾
4	4	0¾	**1**	1
5	5	1	¼	¼
6	6	1⅛	½	½
7	7	1⅜	¾	¾
8	8	1½	**2**	**2**
9	9	1¾	¼	¼
10	10	1⅞	½	½
11	11	2⅛	¾	¾
12	12	2¼	**3**	**3**
13	13	2½	¼	¼
14	14	2⅝	½	½
15	15	2⅞	¾	¾
16	16	3	**4**	**4**
17	17	3¼	¼	⅜
18	18	3⅜	½	⅝
19	19	3⅝	¾	⅞
20	20	3¾	**5**	**5**⅛
21	21	4	¼	⅜
22	22	4⅛	½	⅝
23	23	4⅜	¾	⅞
24	24	4½	**6**	**6**⅛
25	25	4¾	¼	⅜
26	26	4⅞	½	⅝
27	27	5⅛	¾	⅞
28	28	5¼	**7**	**7**⅛
29	29	5½	¼	⅜
30	30	5⅝	½	⅝
31	31	5⅞	¾	⅞
32	32	6	**8**	**8**⅛
33	33	6¼	¼	⅜
34	34	6⅜	½	⅝
35	35	6⅝	¾	⅞
36	36	6¾	**9**	**9**⅛
37	37	7	¼	⅜
38	38	7⅛	½	⅝
39	39	7⅜	¾	⅞
40	40	7½	**10**	10⅛
41	41	7¾	¼	⅜
42	42	7⅞	½	⅝
43	43	8⅛	¾	⅞
44	44	8¼	**11**	11⅛
45	45	8½	¼	⅜
46	46	8⅝	½	⅝
47	47	8⅞	¾	⅞
48	48	9	**12**	12⅛
49	49	9¼		
50	50	9⅜		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1¾
2..		3⅝
3..		5⅜
4..		7¼
5..		9
6..		10⅞
7..	1	0⅝
8..		2⅜
9..		4¼
10..		6
11..		7⅞
12..		9⅝
13..		11½
14..	2	1¼
15..		3
16..		4⅞
17..		6⅝
18..		8½
19..		10¼
20..	3	0
21..		1⅞
22..		3⅝
23..		5½
24..		7¼
25..		9⅛
26..		10⅞
27..	4	0⅝
28..		2½
29..		4¼
30..		6⅛
31..		7⅞
32..		9¾
33..		11½
34..	5	1¼
35..		3⅛
36..		4⅞
37..		6¾
38..		8½
39..		10¼
40..	6	0⅛
41..		1⅞
42..		3¾
43..		5½
44.		7⅜
45..		9⅛
46..		10⅞
47..	7	0¾
48..		2½

18 & 12 — 56¼°

EXPLANATION

Common Rafter

Width of building...........38'7¾"
Find length of Common Rafter.

Answer:

Under **Span**, ft. find **38'** = 34' 3"
" " in. " 7¾" = 7"

Total length Common Rft. 34'10"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 38'7¾", Hip rafter is 39'10" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 32" apart are 4'9¾" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 18 - 12
Level. 12 - 18

Hip Rafter

Plumb 9 - 8½
Level. 8½- 9
Side.. 12⅜- 8½
Backing 9 - 12⅜
Set bevel to last named.

Jack Rafter

Plumb 18 - 12
Level. 12 - 18
Side.. 21⅝- 12

Purlin Rafter Roof Sheathing

Plumb 18 - 21⅝
Cross. 12 - 21⅝

Valley Shingles

Cross. 12 - 21⅝
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 18 - 12
Mitre. 21⅝- 12

Bisection of
18- 12=12¾- 24

For full explanation see Index.

COMMON RAFTER					HIP or VALLEY RAFTER				
Span	Length		Span	Lgth.	Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.	Ft.	Ft.	In.	In.	In.
1		10⅞	¼	¼	1	1	0⅜	¼	¼
2	1	9⅝	½	½	2	2	0¾	½	½
3	2	8½	¾	⅝	3	3	1⅛	¾	¾
4	3	7¼	1	⅞	4	4	1½	1	1
5	4	6⅛	¼	1⅛	5	5	1⅞	¼	¼
6	5	4⅞	½	⅜	6	6	2¼	½	½
7	6	3¾	¾	⅝	7	7	2⅝	¾	¾
8	7	2½	2	¾	8	8	3	2	2
9	8	1⅜	¼	2	9	9	3⅜	¼	⅜
10	9	0⅛	½	¼	10	10	3⅝	½	⅝
11	9	11	¾	½	11	11	4⅛	¾	⅞
12	10	9¾	3	¾	12	12	4⅜	3	3⅛
13	11	8⅝	¼	⅞	13	13	4¾	¼	⅜
14	12	7⅜	½	3⅛	14	14	5¼	½	⅝
15	13	6¼	¾	⅜	15	15	5½	¾	⅞
16	14	5⅛	4	⅝	16	16	5⅞	4	4⅛
17	15	3⅞	¼	⅞	17	17	6¼	¼	⅜
18	16	2¾	½	4	18	18	6⅝	½	⅝
19	17	1½	¾	¼	19	19	7	¾	⅞
20	18	0⅜	5	½	20	20	7⅜	5	5⅛
21	18	11⅛	¼	¾	21	21	7¾	¼	⅜
22	19	10	½	5	22	22	8⅛	½	⅝
23	20	8¾	¾	⅛	23	23	8½	¾	⅞
24	21	7⅝	6	⅜	24	24	8⅞	6	6⅛
25	22	6⅜	¼	⅝	25	25	9¼	¼	½
26	23	5¼	½	⅞	26	26	9⅝	½	¾
27	24	4	¾	6⅛	27	27	10	¾	7
28	25	2⅞	7	¼	28	28	10⅜	7	¼
29	26	1⅝	¼	½	29	29	10¾	¼	½
30	27	0½	½	¾	30	30	11⅛	½	¾
31	27	11⅜	¾	7	31	31	11½	¾	8
32	28	10⅛	8	¼	32	32	11⅞	8	¼
33	29	9	¼	⅜	33	34	0⅛	¼	½
34	30	7¾	½	⅝	34	35	0½	½	¾
35	31	6⅝	¾	⅞	35	36	0⅞	¾	9
36	32	5⅜	9	8⅛	36	37	1¼	9	¼
37	33	4¼	¼	⅜	37	38	1⅝	¼	½
38	34	3	½	⅝	38	39	2	½	¾
39	35	1⅞	¾	¾	39	40	2⅜	¾	10
40	36	0⅝	10	9	40	41	2¾	10	¼
41	36	11½	¼	¼	41	42	3⅛	¼	½
42	37	10¼	½	½	42	43	3½	½	⅞
43	38	9⅛	¾	¾	43	44	3⅞	¾	11⅛
44	39	7⅞	11	⅞	44	45	4¼	11	⅜
45	40	6¾	¼	10⅛	45	46	4⅝	¼	⅝
46	41	5⅝	½	⅜	46	47	5	½	⅞
47	42	4⅜	¾	⅝	47	48	5⅜	¾	12⅛
48	43	3¼	12	⅞	48	49	5¾	12	⅜
49	44	2			49	50	6⅛		
50	45	0⅞			50	51	6½		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		1⅞
2..		3⅝
3..		5½
4..		7⅜
5..		9¼
6..		11
7..	1	0⅞
8..		2¾
9..		4½
10..		6⅜
11..		8¼
12..		10
13..		11⅞
14..	2	1¾
15..		3⅝
16..		5⅜
17..		7¼
18..		9⅛
19..		10⅞
20..	3	0¾
21..		2⅝
22..		4⅜
23..		6¼
24..		8⅛
25..		10
26..		11¾
27..	4	1⅝
28..		3½
29..		5¼
30..		7⅛
31..		9
32..		10¾
33..	5	0⅝
34..		2½
35..		4⅜
36..		6⅛
37..		8
38..		9⅞
39..		11⅝
40..	6	1½
41..		3⅜
42..		5⅛
43..		7
44..		8⅞
45..		10¾
46..	7	0½
47..		2⅜
48..		4¼

18½ & 12 — 57°

EXPLANATION

Common Rafter

Width of building...........47′5½″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 47′ = 43′ 2¼″
" " **in.** " 5½″ = 5″

Total length Common Rft. 43′ 7¼″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 47′5½″, Hip rafter is 49′7¾″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 23″ apart are 3′6¼″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 18½- 12
Level. 12 - 18½

Hip Rafter

Plumb 9¼- 8½
Level. 8½- 9¼
Side.. 12½- 8½
Backing 9¼- 12½
Set bevel to last named.

Jack Rafter

Plumb 18½- 12
Level. 12 - 18½
Side.. 22 - 12

Purlin Rafter Roof Sheathing

Plumb 18½- 22
Cross. 12 - 22

Valley Shingles

Cross. 12 - 22
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 18½- 12
Mitre. 22 - 12

Bisection of

18½- 12=12⅞- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.11	¼	¼
2	1.10	½	½
3	2. 9⅛	¾	¾
4	3. 8⅛	1	⅞
5	4. 7⅛	¼	1⅛
6	5. 6⅛	½	⅜
7	6. 5⅛	¾	⅝
8	7. 4¼	2	⅞
9	8. 3¼	¼	2⅛
10	9. 2¼	½	¼
11	10. 1¼	¾	½
12	11. 0¼	3	¾
13	11.11⅜	¼	3
14	12.10⅜	½	¼
15	13. 9⅜	¾	½
16	14. 8⅜	4	⅝
17	15. 7⅜	¼	⅞
18	16. 6½	½	4⅛
19	17. 5½	¾	⅜
20	18. 4½	5	⅝
21	19. 3½	¼	⅞
22	20. 2½	½	5
23	21. 1⅝	¾	¼
24	22. 0⅝	6	½
25	22.11⅝	¼	¾
26	23.10⅝	½	6
27	24. 9¾	¾	¼
28	25. 8¾	7	⅜
29	26. 7¾	¼	⅝
30	27. 6¾	½	⅞
31	28. 5¾	¾	7⅛
32	29. 4⅞	8	⅜
33	30. 3⅞	¼	⅝
34	31. 2⅞	½	¾
35	32. 1⅞	¾	8
36	33. 0⅞	9	¼
37	34. 0	¼	½
38	34.11	½	¾
39	35.10	¾	⅞
40	36. 9	10	9⅛
41	37. 8	¼	⅜
42	38. 7⅛	½	⅝
43	39. 6⅛	¾	⅞
44	40. 5⅛	11	10⅛
45	41. 4⅛	¼	⅜
46	42. 3⅛	½	½
47	43. 2¼	¾	¾
48	44. 1¼	12	11
49	45. 0¼		
50	45.11¼		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 0½	¼	¼
2	2. 1⅛	½	½
3	3. 1⅝	¾	¾
4	4. 2¼	1	1
5	5. 2¾	¼	¼
6	6. 3⅜	½	⅝
7	7. 3⅞	¾	⅞
8	8. 4⅜	2	2⅛
9	9. 5	¼	⅜
10	10. 5½	½	⅝
11	11. 6⅛	¾	⅞
12	12. 6⅝	3	3⅛
13	13. 7⅛	¼	⅜
14	14. 7¾	½	⅝
15	15. 8¼	¾	⅞
16	16. 8⅞	4	4⅛
17	17. 9⅜	¼	½
18	18.10	½	¾
19	19.10½	¾	5
20	20.11	5	¼
21	21.11⅝	¼	½
22	23. 0⅛	½	¾
23	24. 0¾	¾	6
24	25. 1¼	6	¼
25	26. 1¾	¼	½
26	27. 2⅜	½	¾
27	28. 2⅞	¾	7⅛
28	29. 3½	7	⅜
29	30. 4	¼	⅝
30	31. 4⅝	½	⅞
31	32. 5⅛	¾	8⅛
32	33. 5⅝	8	⅜
33	34. 6¼	¼	⅝
34	35. 6¾	½	⅞
35	36. 7⅜	¾	9⅛
36	37. 7⅞	9	⅜
37	38. 8½	¼	⅝
38	39. 9	½	10
39	40. 9½	¾	¼
40	41.10⅛	10	½
41	42.10⅝	¼	¾
42	43.11¼	½	11
43	44.11¾	¾	¼
44	46. 0¼	11	½
45	47. 0⅞	¼	¾
46	48. 1⅜	½	12
47	49. 2	¾	¼
48	50. 2½	12	½
49	51. 3⅛		
50	52. 3⅝		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1⅞
2..		3¾
3..		5⅝
4..		7½
5..		9⅜
6..		11¼
7..	1	1⅛
8..		3
9..		4⅞
10..		6¾
11..		8⅝
12..		10½
13..	2	0⅜
14..		2¼
15..		4⅛
16..		6
17..		7⅞
18..		9¾
19..		11⅝
20..	3	1½
21..		3⅜
22..		5¼
23..		7⅛
24..		9
25..		10⅞
26..	4	0¾
27..		2½
28..		4⅜
29..		6¼
30..		8⅛
31..		10
32..		11⅞
33..	5	1¾
34..		3⅝
35..		5½
36..		7⅜
37..		9¼
38..		11⅛
39..	6	1
40..		2⅞
41..		4¾
42..		6⅝
43..		8½
44..		10⅜
45..	7	0¼
46..		2⅛
47..		4
48..		5⅞

19 & 12 — 57¾°

EXPLANATION

Common Rafter

Width of building..........38'4¾"
Find length of Common Rafter.

Answer:
Under **Span**, ft. find 38' = 35' 7"
" " **in.** " 4¾" = 4½

Total length Common Rft. 35'11½"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 38'4¾", Hip rafter is 40'9" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 31" apart are 4'10" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 19 - 12
Level. 12 - 19

Hip Rafter

Plumb 9½- 8½
Level. 8½- 9½
Side.. 12¾- 8½
Backing 9½- 12¾
Set bevel to last named.

Jack Rafter

Plumb 19 - 12
Level. 12 - 19
Side.. 22½- 12

Purlin Rafter
Roof Sheathing

Plumb 19 - 22½
Cross. 12 - 22½

Valley Shingles

Cross. 12 - 22½
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 19 - 12
Mitre. 22½- 12

Bisection of
19- 12=13⅛- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.11¼	¼	¼
2	1.10½	½	½
3	2. 9¾	¾	¾
4	3. 9	1	⅞
5	4. 8¼	¼	1⅛
6	5. 7⅜	½	⅜
7	6. 6⅝	¾	⅝
8	7. 5⅞	2	⅞
9	8. 5⅛	¼	2⅛
10	9. 4⅜	½	⅜
11	10. 3⅝	¾	⅝
12	11. 2⅞	3	¾
13	12. 2⅛	¼	3
14	13. 1¼	½	¼
15	14. 0½	¾	½
16	14.11¾	4	¾
17	15.11	¼	4
18	16.10¼	½	¼
19	17. 9½	¾	½
20	18. 8¾	5	⅝
21	19. 8	¼	⅞
22	20. 7¼	½	5⅛
23	21. 6⅜	¾	⅜
24	22. 5⅝	6	⅝
25	23. 4⅞	¼	⅞
26	24. 4⅛	½	6⅛
27	25. 3⅜	¾	⅜
28	26. 2⅝	7	½
29	27. 1⅞	¼	¾
30	28. 1⅛	½	7
31	29. 0⅜	¾	¼
32	29.11½	8	½
33	30.10¾	¼	¾
34	31.10	½	8
35	32. 9¼	¾	¼
36	33. 8½	9	⅜
37	34. 7¾	¼	⅝
38	35. 7	½	⅞
39	36. 6¼	¾	9⅛
40	37. 5½	10	⅜
41	38. 4⅝	¼	⅝
42	39. 3⅞	½	⅞
43	40. 3⅛	¾	10⅛
44	41. 2⅜	11	¼
45	42. 1⅝	¼	½
46	43. 0⅞	½	¾
47	44. 0⅛	¾	11
48	44.11⅜	12	¼
49	45.10⅝		
50	46. 9¾		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 0¾	¼	¼
2	2. 1½	½	½
3	3. 2¼	¾	¾
4	4. 3	1	1
5	5. 3¾	¼	⅜
6	6. 4⅜	½	⅝
7	7. 5⅛	¾	⅞
8	8. 5⅞	2	2⅛
9	9. 6⅝	¼	⅜
10	10. 7⅜	½	⅝
11	11. 8⅛	¾	⅞
12	12. 8⅞	3	3⅛
13	13. 9⅝	¼	½
14	14.10⅜	½	¾
15	15.11⅛	¾	4
16	16.11¾	4	¼
17	18. 0½	¼	½
18	19. 1¼	½	¾
19	20. 2	¾	5
20	21. 2¾	5	¼
21	22. 3½	¼	⅝
22	23. 4¼	½	⅞
23	24. 5	¾	6⅛
24	25. 5¾	6	⅜
25	26. 6½	¼	⅝
26	27. 7⅛	½	7
27	28. 7⅞	¾	⅛
28	29. 8⅝	7	⅜
29	30. 9⅜	¼	¾
30	31.10⅛	½	8
31	32.10⅞	¾	¼
32	33.11⅝	8	½
33	35. 0⅜	¼	¾
34	36. 1⅛	½	9
35	37. 1⅞	¾	¼
36	38. 2½	9	½
37	39. 3¼	¼	⅞
38	40. 4	½	10⅛
39	41. 4¾	¾	⅜
40	42. 5½	10	⅝
41	43. 6¼	¼	⅞
42	44. 7	½	11⅛
43	45. 7¾	¾	⅜
44	46. 8½	11	⅝
45	47. 9¼	¼	12
46	48. 9⅞	½	¼
47	49.10⅝	¾	½
48	50.11⅜	12	¾
49	52. 0⅛		
50	53. 0⅞		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		1⅞
2..		3⅞
3..		5¾
4..		7⅝
5..		9½
6..		11½
7..	1	1⅜
8..		3¼
9..		5⅛
10..		7⅛
11..		9
12..		10⅞
13..	2	0¾
14..		2¾
15..		4⅝
16..		6½
17..		8⅜
18..		10⅜
19..	3	0¼
20..		2⅛
21..		4⅛
22..		6
23..		7⅞
24..		9¾
25..		11¾
26..	4	1⅝
27..		3½
28..		5⅜
29..		7⅜
30..		9¼
31..		11⅛
32..	5	1
33..		3
34..		4⅞
35..		6¾
36..		8¾
37..		10⅝
38..	6	0½
39..		2⅜
40..		4⅜
41..		6¼
42..		8⅛
43..		10
44..	7	0
45..		1⅞
46..		3¾
47..		5⅝
48..		7⅝

19½ & 12 — 58½°

EXPLANATION

Common Rafter

Width of building...........40′4¼″
Find length of Common Rafter.

Answer:

Under Span, ft. find 40′ = 38′ 1⅞″
" " in. " 4¼″ = 4″

Total length Common Rft. 38 5⅞″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 40′4¼″, Hip rafter is 43′5⅝″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 27″ apart are 4′3½″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 19½- 12
Level. 12 - 19½

Hip Rafter

Plumb 9¾- 8½
Level. 8½- 9¾
Side.. 12⅞- 8½
Backing 9¾- 12⅞
Set bevel to last named.

Jack Rafter

Plumb 19½- 12
Level.. 12 - 19½
Side.. 22⅞- 12

Purlin Rafter Roof Sheathing

Plumb 19½- 22⅞
Cross. 12 - 22⅞

Valley Shingles

Cross. 12 - 22⅞
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 19½- 12
Mitre. 22⅞- 12

Bisection of

19½- 12=13¼- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.11½	¼	¼
2	1.10⅞	½	½
3	2.10⅜	¾	¾
4	3. 9¾	1	1
5	4. 9¼	¼	¼
6	5. 8¾	½	⅜
7	6. 8⅛	¾	⅝
8	7. 7⅝	2	⅞
9	8. 7	¼	2⅛
10	9. 6½	½	⅜
11	10. 5⅞	¾	⅝
12	11. 5⅜	3	⅞
13	12. 4⅞	¼	3⅛
14	13. 4¼	½	⅜
15	14. 3¾	¾	⅝
16	15. 3⅛	4	⅞
17	16. 2⅝	¼	4
18	17. 2⅛	½	¼
19	18. 1½	¾	½
20	19. 1	5	¾
21	20. 0⅜	¼	5
22	20.11⅞	½	¼
23	21.11¼	¾	½
24	22.10¾	6	¾
25	23.10¼	¼	6
26	24. 9⅝	½	¼
27	25. 9⅛	¾	⅜
28	26. 8½	7	⅝
29	27. 8	¼	⅞
30	28. 7½	½	7⅛
31	29. 6⅞	¾	⅜
32	30. 6⅜	8	⅝
33	31. 5¾	¼	¾
34	32. 5¼	½	8⅛
35	33. 4¾	¾	⅜
36	34. 4⅛	9	⅝
37	35. 3⅝	¼	⅞
38	36. 3	½	9
39	37. 2½	¾	¼
40	38. 1⅞	10	½
41	39. 1⅜	¼	¾
42	40. 0⅞	½	10
43	41. 0¼	¾	¼
44	41.11¾	11	½
45	42.11⅛	¼	¾
46	43.10⅝	½	11
47	44.10⅛	¾	¼
48	45. 9½	12	½
49	46. 9		
50	47. 8⅜		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 0⅞	¼	¼
2	2. 1⅞	½	½
3	3. 2¾	¾	⅞
4	4. 3¾	1	1⅛
5	5. 4⅝	¼	⅜
6	6. 5½	½	⅝
7	7. 6½	¾	⅞
8	8. 7⅜	2	2⅛
9	9. 8⅜	¼	⅜
10	10. 9¼	½	⅝
11	11.10⅛	¾	3
12	12.11⅛	3	¼
13	14. 0	¼	½
14	15. 1	½	¾
15	16. 1⅞	¾	4
16	17. 2¾	4	¼
17	18. 3¼	¼	⅝
18	19. 4⅝	½	⅞
19	20. 5⅝	¾	5⅛
20	21. 6½	5	⅜
21	22. 7⅜	¼	⅝
22	23. 8⅜	½	⅞
23	24. 9¼	¾	6¼
24	25.10¼	6	½
25	26.11⅛	¼	¾
26	28. 0	½	7
27	29. 1	¾	¼
28	30. 1⅞	7	½
29	31. 2⅞	¼	¾
30	32. 3¾	½	8⅛
31	33. 4⅝	¾	⅜
32	34. 5⅝	8	⅝
33	35. 6½	¼	⅞
34	36. 7½	½	9⅛
35	37. 8⅜	¾	⅜
36	38. 9¼	9	¾
37	39.10¼	¼	10
38	40.11⅛	½	¼
39	42. 0⅛	¾	½
40	43. 1	10	¾
41	44. 1⅞	¼	11
42	45. 2⅞	½	¼
43	46. 3¾	¾	⅝
44	47. 4¾	11	⅞
45	48. 5⅝	¼	12⅛
46	49. 6½	½	⅜
47	50. 7½	¾	⅝
48	51. 8⅜	12	⅞
49	52. 9⅜		
50	53.10¼		

JACK RAFTER

Spaced In.	Length Ft.	Length In.
1..		2
2..		3⅞
3..		5⅞
4..		7¾
5..		9¾
6..		11⅝
7..	1	1⅝
8..		3½
9..		5½
10..		7⅜
11..		9⅜
12..		11⅜
13..	2	1¼
14..		3¼
15..		5⅛
16..		7⅛
17..		9
18..		11
19..	3	0⅞
20..		2⅞
21..		4⅞
22..		6¾
23..		8¾
24..		10⅝
25..	4	0⅝
26..		2½
27..		4½
28..		6⅜
29..		8⅜
30..		10¼
31..	5	0¼
32..		2¼
33..		4⅛
34..		6⅛
35..		8
36..		10
37..		11⅞
38..	6	1⅞
39..		3¾
40..		5¾
41..		7¾
42..		9⅝
43..		11⅝
44..	7	1½
45..		3½
46..		5⅜
47..		7⅜
48..		9¼

20 & 12 — 59°

EXPLANATION

Common Rafter

Width of building...........35'7¼"
Find length of Common Rafter.

Answer:

Under **Span, ft.** find **35'** = **34' 0⅛"**
" " **in.** " **7¼" = 7"**

Total length Common Rft. 34' 7⅛"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 35'7¼", Hip rafter is 38'10⅞" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge **is** backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 34" apart are 5'6⅛" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb **20 - 12**
Level. **12 - 20**

Hip Rafter

Plumb **10 - 8½**
Level. **8½- 10**
Side.. **13⅛- 8½**
Backing**10 - 13⅛**
Set bevel to last named.

Jack Rafter

Plumb **20 - 12**
Level. **12 - 20**
Side.. **23⅜- 12**

Purlin Rafter Roof Sheathing

Plumb **20 - 23⅜**
Cross. **12 - 23⅜**

Valley Shingles

Cross. **12 - 23⅜**
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb **20 - 12**
Mitre. **23⅜- 12**

Bisection of
20- 12=13½- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.11⅝	¼	¼
2	1.11⅜	½	½
3	2.11	¾	¾
4	3.10⅝	1	1
5	4.10¼	¼	¼
6	5.10	½	½
7	6. 9⅝	¾	¾
8	7. 9¼	2	2
9	8. 9	¼	¼
10	9. 8⅝	½	⅜
11	10. 8¼	¾	⅝
12	11. 8	3	⅞
13	12. 7⅝	¼	3⅛
14	13. 7¼	½	⅜
15	14. 6⅞	¾	⅝
16	15. 6⅝	4	⅞
17	16. 6¼	¼	4⅛
18	17. 5⅞	½	⅜
19	18. 5⅝	¾	⅝
20	19. 5¼	5	⅞
21	20. 4⅞	¼	5⅛
22	21. 4½	½	⅜
23	22. 4¼	¾	⅝
24	23. 3⅞	6	⅞
25	24. 3½	¼	6⅛
26	25. 3¼	½	⅜
27	26. 2⅞	¾	½
28	27. 2½	7	¾
29	28. 2¼	¼	7
30	29. 1⅞	½	¼
31	30. 1½	¾	½
32	31. 1⅛	8	¾
33	32. 0⅞	¼	8
34	33. 0½	½	¼
35	34. 0⅛	¾	½
36	34.11⅞	9	¾
37	35.11½	¼	9
38	36.11⅛	½	¼
39	37.10⅞	¾	½
40	38.10½	10	¾
41	39.10⅛	¼	10
42	40. 9¾	½	¼
43	41. 9½	¾	½
44	42. 9⅛	11	¾
45	43. 8¾	¼	11
46	44. 8½	½	⅛
47	45. 8⅛	¾	⅜
48	46. 7¾	12	⅝
49	47. 7½		
50	48. 7⅛		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 1⅛	¼	¼
2	2. 2¼	½	½
3	3. 3⅜	¾	⅞
4	4. 4½	1	1⅛
5	5. 5⅝	¼	⅜
6	6. 6¾	½	⅝
7	7. 7¾	¾	⅞
8	8. 8⅞	2	2⅛
9	9.10	¼	½
10	10.11⅛	½	¾
11	12. 0¼	¾	3
12	13. 1⅜	3	¼
13	14. 2½	¼	½
14	15. 3⅝	½	⅞
15	16. 4¾	¾	4⅛
16	17. 5⅞	4	⅜
17	18. 7	¼	⅝
18	19. 8⅛	½	⅞
19	20. 9⅛	¾	5¼
20	21.10¼	5	½
21	22.11⅜	¼	¾
22	24. 0½	½	6
23	25. 1⅝	¾	¼
24	26. 2¾	6	½
25	27. 3⅞	¼	⅞
26	28. 5	½	7⅛
27	29. 6⅛	¾	⅜
28	30. 7¼	7	⅝
29	31. 8⅜	¼	⅞
30	32. 9½	½	8¼
31	33.10½	¾	½
32	34.11⅝	8	¾
33	36. 0¾	¼	9
34	37. 1⅞	½	¼
35	38. 3	¾	⅝
36	39. 4⅛	9	⅞
37	40. 5¼	¼	10⅛
38	41. 6⅜	½	⅜
39	42. 7½	¾	⅝
40	43. 8⅝	10	⅞
41	44. 9¾	¼	11¼
42	45.10⅞	½	½
43	47. 0	¾	¾
44	48. 1	11	12
45	49. 2⅛	¼	¼
46	50. 3¼	½	⅝
47	51. 4⅜	¾	⅞
48	52. 5½	12	13⅛
49	53. 6⅝		
50	54. 7¾		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1		2
2		4
3		6
4		7⅞
5		9⅞
6		11⅞
7	1	1⅞
8		3⅞
9		5⅞
10		7¾
11		9¾
12		11¾
13	2	1¾
14		3¾
15		5¾
16		7⅝
17		9⅝
18		11⅝
19	3	1⅝
20		3⅝
21		5⅝
22		7½
23		9½
24		11½
25	4	1½
26		3½
27		5½
28		7⅜
29		9⅜
30		11⅜
31	5	1⅜
32		3⅜
33		5⅜
34		7¼
35		9¼
36		11¼
37	6	1¼
38		3¼
39		5¼
40		7⅛
41		9⅛
42		11⅛
43	7	1⅛
44		3⅛
45		5⅛
46		7
47		9
48		11

20½ & 12 — 59¾°

EXPLANATION

Common Rafter

Width of building...........49'4½"
Find length of Common Rafter.
Answer:
Under Span, ft. find 49' = 48' 6"
" " in. " 4½" = 4½=

Total length Common Rft. 48'10½"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. **Allow for** half thickness of ridge.

Spans over 50', as 60', **add lengths** of 50' & 10' spans together.

Hip Rafter

If common rafter span is **49'4½"**, Hip rafter is 54'9" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 23" apart are **3'9½"** different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter
Plumb 20½- 12
Level. 12 - 20½

Hip Rafter
Plumb 10¼- 8½
Level. 8½- 10¼
Side.. 13¼- 8½
Backing 10¼- 13¼
Set bevel to last named.

Jack Rafter
Plumb 20½- 12
Level. 12 - 20½
Side.. 23¾- 12

Purlin Rafter
Roof Sheathing
Plumb 20½- 23¾
Cross. 12 - 23¾

Valley Shingles
Cross. 12 - 23¾
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds
Plumb 20½- 12
Mitre. 23¾- 12

Bisection of
20½- 12=13⅝- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	.11⅞	¼	¼
2	1.11¾	½	½
3	2.11⅝	¾	¾
4	3.11½	1	1
5	4.11⅜	¼	¼
6	5.11¼	½	½
7	6.11⅛	¾	¾
8	7.11	2	2
9	8.10⅞	¼	¼
10	9.10¾	½	½
11	10.10⅝	¾	¾
12	11.10½	3	3
13	12.10⅜	¼	¼
14	13.10¼	½	½
15	14.10⅛	¾	¾
16	15.10	4	4
17	16. 9⅞	¼	¼
18	17. 9¾	½	½
19	18. 9⅝	¾	¾
20	19. 9½	5	5
21	20. 9⅜	¼	¼
22	21. 9¼	½	½
23	22. 9⅛	¾	¾
24	23. 9	6	6
25	24. 8⅞	¼	¼
26	25. 8¾	½	⅜
27	26. 8⅝	¾	¾
28	27. 8½	7	⅞
29	28. 8⅜	¼	7⅛
30	29. 8¼	½	⅜
31	30. 8¼	¾	⅝
32	31. 8⅛	8	⅞
33	32. 8	¼	8⅛
34	33. 7⅞	½	⅜
35	34. 7¾	¾	⅝
36	35. 7⅝	9	⅞
37	36. 7½	¼	9⅛
38	37. 7⅜	½	⅜
39	38. 7¼	¾	⅝
40	39. 7⅛	10	⅞
41	40. 7	¼	10⅛
42	41. 6⅞	½	⅜
43	42. 6¾	¾	⅝
44	43. 6⅝	11	⅞
45	44. 6½	¼	11⅛
46	45. 6⅜	½	⅜
47	46. 6¼	¾	⅝
48	47. 6⅛	12	⅞
49	48. 6		
50	49. 5⅞		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 1¼	¼	¼
2	2. 2⅜	½	½
3	3. 3⅞	¾	⅞
4	4. 5¼	1	1⅛
5	5. 6½	¼	⅜
6	6. 7⅞	½	⅝
7	7. 9⅛	¾	2
8	8.10½	2	¼
9	9.11¾	¼	½
10	11. 1⅛	½	¾
11	12. 2⅜	¾	3
12	13. 3⅝	3	⅜
13	14. 5	¼	⅝
14	15. 6¼	½	⅞
15	16. 7⅝	¾	4⅛
16	17. 8⅞	4	⅜
17	18.10¼	¼	¾
18	19.11½	½	5
19	21. 0⅞	¾	¼
20	22. 2⅛	5	½
21	23. 3½	¼	⅞
22	24. 4¾	½	6⅛
23	25. 6	¾	⅜
24	26. 7⅜	6	⅝
25	27. 8⅝	¼	⅞
26	28.10	½	7¼
27	29.11¼	¾	½
28	31. 0⅝	7	¾
29	32. 1⅞	¼	8
30	33. 3¼	½	⅜
31	34. 4½	¾	⅝
32	35. 5¾	8	⅞
33	36. 7⅛	¼	9⅛
34	37. 8⅜	½	⅜
35	38. 9¾	¾	¾
36	39.11	9	10
37	41. 0⅜	¼	¼
38	42. 1⅝	½	½
39	43. 3	¾	¾
40	44. 4¼	10	11⅛
41	45. 5⅝	¼	⅜
42	46. 6⅞	½	⅝
43	47. 8⅛	¾	⅞
44	48. 9½	11	12¼
45	49.10¾	¼	½
46	51. 0⅛	½	¾
47	52. 1⅜	¾	13
48	53. 2¾	12	¼
49	54. 4		
50	55. 5⅜		

JACK RAFTER

Spaced In.	Length Ft. In.
1..	2
2..	4
3..	6
4..	8⅛
5..	10⅛
6	1..0⅛
7..	2⅛
8..	4⅛
9..	6⅛
10..	8⅛
11..	10⅛
12	2..0¼
13..	2¼
14..	4¼
15..	6¼
16..	8¼
17..	10¼
18	3..0¼
19..	2¼
20..	4⅜
21..	6⅜
22..	8⅜
23..	10⅜
24..4	0⅜
25..	2⅜
26..	4⅜
27..	6⅜
28..	8½
29..	10½
30..5	0½
31..	2½
32..	4½
33..	6½
34..	8½
35..	10½
36..6	0⅝
37..	2⅝
38..	4⅝
39..	6⅝
40..	8⅝
41..	10⅝
42..7	0⅝
43..	2⅝
44..	4¾
45..	6¾
46..	8¾
47..	10¾
48..8	0¾

21 & 12 60¼°

EXPLANATION

Common Rafter

Width of building...........43'4½"
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 43' = 43' 4"
" " in. " 4½" = 4½"

Total length Common Rft. 43' 8½"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 43'4½", Hip rafter is 48'9½" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 32" apart are 5'4½" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 21 - 12
Level. 12 - 21

Hip Rafter

Plumb 10½- 8½
Level. 8½- 10½
Side.. 13½- 8½
Backing 10½- 13½
Set bevel to last named.

Jack Rafter

Plumb 21 - 12
Level. 12 - 21
Side.. 12⅛- 6

Purlin Rafter Roof Sheathing

Plumb 10½- 12⅛
Cross. 6- 12⅛

Valley Shingles

Cross. 6- 12⅛
Set bevel on but end.

Mitre-Box Cuts for Gable Moulds

Plumb 21 - 12
Mitre. 12⅛- 6

Bisection of
21- 12=13¾- 24

For full explanation see Index.

COMMON RAFTER				HIP or VALLEY RAFTER			
Span Ft.	Length Ft. In.	Span In.	Lgth. In.	Span	Length Ft. In.	Span In.	Lgth. In.
1	1. 0⅛	¼	¼	1	1. 1½	¼	¼
2	2. 0⅛	½	½	2	2. 3	½	⅝
3	3. 0¼	¾	¾	3	3. 4½	¾	⅞
4	4. 0⅜	1	1	4	4. 6	1	1⅛
5	5. 0½	¼	¼	5	5. 7½	¼	⅜
6	6. 0½	½	½	6	6. 9	½	¾
7	7. 0⅝	¾	¾	7	7. 10½	¾	2
8	8. 0¾	2	2	8	9. 0	2	¼
9	9. 0⅞	¼	¼	9	10. 1½	¼	½
10	10. 0⅞	½	½	10	11. 3	½	⅞
11	11. 1	¾	¾	11	12. 4½	¾	3⅛
12	12. 1⅛	3	3	12	13. 6	3	⅜
13	13. 1¼	¼	¼	13	14. 7½	¼	⅝
14	14. 1¼	½	½	14	15. 9	½	⅞
15	15. 1⅜	¾	¾	15	16. 10½	¾	4¼
16	16. 1½	4	4	16	18. 0	4	½
17	17. 1⅝	¼	¼	17	19. 1½	¼	¾
18	18. 1⅝	½	½	18	20. 3	½	5
19	19. 1¾	¾	¾	19	21. 4½	¾	⅜
20	20. 1⅞	5	5	20	22. 6	5	⅝
21	21. 2	¼	¼	21	23. 7½	¼	⅞
22	22. 2	½	½	22	24. 9	½	6⅛
23	23. 2⅛	¾	¾	23	25. 10½	¾	½
24	24. 2¼	6	6	24	27. 0	6	¾
25	25. 2⅜	¼	¼	25	28. 1½	¼	7
26	26. 2⅜	½	½	26	29. 3	½	¼
27	27. 2½	¾	¾	27	30. 4½	¾	⅝
28	28. 2⅝	7	7	28	31. 6	7	⅞
29	29. 2¾	¼	¼	29	32. 7½	¼	8⅛
30	30. 2¾	½	½	30	33. 9	½	⅜
31	31. 2⅞	¾	⅞	31	34. 10½	¾	¾
32	32. 3	8	8⅛	32	36. 0	8	9
33	33. 3⅛	¼	⅜	33	37. 1½	¼	¼
34	34. 3⅛	½	⅝	34	38. 3	½	½
35	35. 3¼	¾	⅞	35	39. 4½	¾	⅞
36	36. 3⅜	9	9⅛	36	40. 6	9	10⅛
37	37. 3½	¼	⅜	37	41. 7½	¼	⅜
38	38. 3½	½	⅝	38	42. 9	½	⅝
39	39. 3⅝	¾	⅞	39	43. 10½	¾	11
40	40. 3¾	10	10⅛	40	45. 0	10	¼
41	41. 3⅞	¼	⅜	41	46. 1½	¼	½
42	42. 3⅞	½	⅝	42	47. 3	½	¾
43	43. 4	¾	⅞	43	48. 4½	¾	12⅛
44	44. 4⅛	11	11⅛	44	49. 6	11	⅜
45	45. 4¼	¼	⅜	45	50. 7½	¼	⅝
46	46. 4¼	½	⅝	46	51. 9	½	⅞
47	47. 4⅜	¾	⅞	47	52. 10½	¾	13¼
48	48. 4½	12	12⅛	48	54. 0	12	½
49	49. 4⅝			49	55. 1½		
50	50. 4⅝			50	56. 3		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1		2
2		4⅛
3		6⅛
4		8¼
5		10¼
6	1	0¼
7		2⅜
8		4⅜
9		6½
10		8½
11		10⅝
12	2	0⅝
13		2⅝
14		4¾
15		6¾
16		8⅞
17		10⅞
18	3	0⅞
19		3
20		5
21		7⅛
22		9⅛
23		11¼
24	4	1¼
25		3¼
26		5⅜
27		7⅜
28		9½
29		11½
30	5	1½
31		3⅝
32		5⅝
33		7¾
34		9¾
35		11⅞
36	6	1⅞
37		3⅞
38		6
39		8
40		10⅛
41	7	0⅛
42		2⅛
43		4¼
44		6¼
45		8⅜
46		10⅜
47	8	0⅜
48		2½

21½ & 12 — 61°

EXPLANATION

Common Rafter

Width of building...........45′5¼″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 45′ = 46′ 2″
" " **in.** " 5¼″ = 5⅜″

Total length Common Rft. 46′ 7⅜″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 45′5¼″, Hip rafter is 51′10¼″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 28″ apart are 4′9″½ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 21½- 12
Level. 12 - 21½

Hip Rafter

Plumb 10¾- 8½
Level. 8½- 10¾
Side.. 13¾- 8½
Backing 10¾- 13¾
Set bevel to last named.

Jack Rafter

Plumb 21½- 12
Level. 12 - 21½
Side.. 12¼- 6

Purlin Rafter Roof Sheathing

Plumb 10¾- 12¼
Cross. 6 - 12¼

Valley Shingles

Cross. 6 - 12¼
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 21½- 12
Mitre. 12¼- 6

Bisection of 21½- 12=13⅞- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 0¼	¼	¼
2	2. 0⅝	½	½
3	3. 0⅞	¾	¾
4	4. 1¼	1	1
5	5. 1½	¼	¼
6	6. 1⅞	½	½
7	7. 2⅛	¾	¾
8	8. 2½	2	2
9	9. 2¾	¼	¼
10	10. 3⅛	½	⅝
11	11. 3⅜	¾	⅞
12	12. 3¾	3	3⅛
13	13. 4	¼	⅜
14	14. 4⅜	½	⅝
15	15. 4⅝	¾	⅞
16	16. 5	4	4⅛
17	17. 5¼	¼	⅜
18	18. 5⅝	½	⅝
19	19. 5⅞	¾	⅞
20	20. 6¼	5	5⅛
21	21. 6½	¼	⅜
22	22. 6⅞	½	⅝
23	23. 7⅛	¾	⅞
24	24. 7½	6	6⅛
25	25. 7¾	¼	⅜
26	26. 8⅛	½	⅝
27	27. 8⅜	¾	⅞
28	28. 8¾	7	7⅛
29	29. 9	¼	⅜
30	30. 9⅜	½	¾
31	31. 9⅝	¾	8
32	32.10	8	¼
33	33.10¼	¼	½
34	34.10⅝	½	¾
35	35.10⅞	¾	9
36	36.11¼	9	¼
37	37.11½	¼	½
38	38.11⅞	½	¾
39	40. 0⅛	¾	10
40	41. 0½	10	¼
41	42. 0¾	¼	½
42	43. 1⅛	½	¾
43	44. 1⅜	¾	11
44	45. 1⅝	11	¼
45	46. 2	¼	½
46	47. 2¼	½	¾
47	48. 2⅝	¾	12
48	49. 2⅞	12	¼
49	50. 3¼		
50	51. 3½		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 1¾	¼	¼
2	2. 3⅜	½	⅝
3	3. 5⅛	¾	⅞
4	4. 6¾	1	1⅛
5	5. 8½	¼	⅜
6	6.10⅛	½	¾
7	7.11⅞	¾	2
8	9. 1⅝	2	¼
9	10. 3¼	¼	⅝
10	11. 5	½	⅞
11	12. 6⅝	¾	3⅛
12	13. 8⅜	3	⅜
13	14.10	¼	¾
14	15.11¾	½	4
15	17. 1⅜	¾	¼
16	18. 3⅛	4	⅝
17	19. 4⅞	¼	⅞
18	20. 6½	½	5⅛
19	21. 8¼	¾	⅜
20	22. 9⅞	5	¾
21	23.11⅝	¼	6
22	25. 1¼	½	¼
23	26. 3	¾	⅝
24	27. 4¾	6	⅞
25	28. 6⅜	¼	7⅛
26	29. 8⅛	½	⅜
27	30. 9¾	¾	¾
28	31.11½	7	8
29	33. 1⅛	¼	¼
30	34. 2⅞	½	⅝
31	35. 4½	¾	⅞
32	36. 6¼	8	9⅛
33	37. 8	¼	⅜
34	38. 9⅝	½	¾
35	39.11⅜	¾	10
36	41. 1	9	¼
37	42. 2¾	¼	½
38	43. 4⅜	½	⅞
39	44. 6⅛	¾	11⅛
40	45. 7⅞	10	⅜
41	46. 9½	¼	¾
42	47.11¼	½	12
43	49. 0⅞	¾	¼
44	50. 2⅝	11	½
45	51. 4¼	¼	⅞
46	52. 6	½	13⅛
47	53. 7⅝	¾	⅜
48	54. 9⅜	12	¾
49	55.11⅛		
50	57. 0¾		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		2⅛
2..		4⅛
3..		6¼
4..		8⅜
5..		10½
6	1	0½
7..		2⅝
8..		4¾
9..		6¾
10..		8⅞
11..		11
12..	2	1
13..		3⅛
14..		5¼
15..		7⅜
16..		9⅜
17..		11½
18..	3	1⅝
19..		3⅝
20..		5¾
21..		7⅞
22..		10
23..	4	0
24..		2⅛
25..		4¼
26..		6¼
27..		8⅜
28..		10½
29..	5	0½
30..		2⅝
31..		4¾
32..		6⅞
33..		8⅞
34..		11
35..	6	1⅛
36..		3⅛
37..		5¼
38..		7⅜
39..		9½
40..		11½
41..	7	1⅝
42..		3¾
43..		5¾
44..		7⅞
45..		10
46..	8	0
47..		2⅛
48..		4¼

22 & 12—61½°

EXPLANATION

Common Rafter

Width of building..........49′1¾″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 49′ = 51′ 2″
“ “ **in.** “ 1¾″ = 1⅞″

Total length Common Rft. 51′ 3⅞″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 49′1¾″, Hip rafter is 56′10¾″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 24″ apart are 4′2⅛″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 22 - 12
Level. 12 - 22

Hip Rafter

Plumb 11 - 8½
Level. 8½- 11
Side.. 13⅞- 8½
Backing 11 - 13⅞
Set bevel to last named.

Jack. Rafter

Plumb 22 - 12
Level. 12 - 22
Side.. 12½- 6

Purlin Rafter Roof Sheathing

Plumb 11 - 12½
Cross. 6 - 12½

Valley Shingles

Cross. 6 - 12½
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 22 - 12
Mitre. 12½- 6

Bisection of

22- 12=14 - 24

For full explanation see Index.

COMMON RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1	1	0½	¼	¼
2	2	1	½	½
3	3	1⅝	¾	¾
4	4	2⅛	**1**	1
5	5	2⅝	¼	¼
6	6	3⅛	½	⅝
7	7	3¾	¾	⅞
8	8	4¼	**2**	2⅛
9	9	4¾	¼	⅜
10	10	5¼	½	⅝
11	11	5⅞	¾	⅞
12	12	6⅜	**3**	3⅛
13	13	6⅞	¼	⅜
14	14	7⅜	½	⅝
15	15	8	¾	⅞
16	16	8½	**4**	4⅛
17	17	9	¼	½
18	18	9½	½	⅝
19	19	10⅛	¾	5
20	20	10⅝	**5**	¼
21	21	11⅛	¼	½
22	22	11⅝	½	¾
23	24	0¼	¾	6
24	25	0¾	**6**	¼
25	26	1¼	¼	½
26	27	1¾	½	¾
27	28	2¼	¾	7
28	29	2⅞	**7**	¼
29	30	3⅜	¼	⅝
30	31	3⅞	½	⅞
31	32	4⅜	¾	8⅛
32	33	5	**8**	⅜
33	34	5½	¼	⅝
34	35	6	½	⅞
35	36	6½	¾	9⅛
36	37	7⅛	**9**	⅜
37	38	7⅝	¼	⅝
38	39	8⅛	½	⅞
39	40	8⅝	¾	10⅛
40	41	9¼	**10**	½
41	42	9¾	¼	¾
42	43	10¼	½	11
43	44	10¾	¾	¼
44	45	11⅜	**11**	½
45	46	11⅞	¼	¾
46	48	0⅜	½	12
47	49	0⅞	¾	¼
48	50	1½	**12**	½
49	51	2		
50	52	2½		

HIP OR VALLEY RAFTER

Span	Length		Span	Lgth.
Ft.	Ft.	In.	In.	In.
1	1	1⅞	¼	¼
2	2	3¾	½	⅝
3	3	5⅝	¾	⅞
4	4	7⅝	**1**	1⅛
5	5	9½	¼	½
6	6	11⅜	½	¾
7	8	1¼	¾	2
8	9	3⅛	**2**	⅜
9	10	5	¼	⅝
10	11	6⅞	½	⅞
11	12	8⅞	¾	3⅛
12	13	10¾	**3**	½
13	15	0⅝	¼	¾
14	16	2½	½	4
15	17	4⅜	¾	⅜
16	18	6¼	**4**	⅝
17	19	8⅛	¼	5
18	20	10⅛	½	¼
19	22	0	¾	½
20	23	1⅞	**5**	¾
21	24	3¾	¼	6⅛
22	25	5⅝	½	⅜
23	26	7½	¾	⅝
24	27	9⅜	**6**	7
25	28	11⅜	¼	¼
26	30	1¼	½	½
27	31	3⅛	¾	⅞
28	32	5	**7**	8⅛
29	33	6⅞	¼	⅜
30	34	8¾	½	⅝
31	35	10⅝	¾	9
32	37	0½	**8**	¼
33	38	2½	¼	½
34	39	4⅜	½	⅞
35	40	6¼	¾	10⅛
36	41	8⅛	**9**	⅜
37	42	10	¼	¾
38	43	11⅞	½	11
39	45	1¾	¾	¼
40	46	3¾	**10**	⅝
41	47	5⅝	¼	⅞
42	48	7½	½	12⅛
43	49	9⅜	¾	½
44	50	11¼	**11**	¾
45	52	1⅛	¼	13
46	53	3	½	⅜
47	54	5	¾	⅝
48	55	6⅞	**12**	⅞
49	56	8¾		
50	57	10⅝		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		2⅛
2..		4¼
3..		6⅜
4..		8½
5..		10⅝
6..	1	0¾
7..		2⅞
8..		5
9..		7⅛
10..		9¼
11..		11⅜
12..	2	1½
13..		3⅝
14..		5¾
15..		7⅞
16..		10
17..	3	0⅛
18..		2¼
19..		4⅜
20..		6½
21..		8⅝
22..		10¾
23..	4	0⅞
24..		3
25..		5⅛
26..		7¼
27..		9⅜
28..		11½
29..	5	1⅝
30..		3¾
31	...	5⅞
32..		8
33..		10⅛
34..	6	0¼
35..		2⅜
36..		4½
37..		6⅝
38..		8¾
39..		10⅞
40..	7	1
41..		3⅛
42..		5¼
43..		7⅜
44..		9½
45..		11⅝
46..	8	1¾
47..		3⅞
48..		6

22½ & 12 — 62°

EXPLANATION

Common Rafter

Width of building...........48′4¼″
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 48′ = 51′ 0″
" " **in.** " 4¼″ = 4½″

Total length Common Rft. 51′ 4½″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run· doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Allow for half thickness of ridge.

Hip Rafter

If common rafter span is 48′4¼″, Hip rafter is 56′9⅜″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Jack Rafters

Spaced 30″ apart are 5′3¾″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 22½- 12
Level. 12 - 22½

Hip Rafter

Plumb 11¼- 8½
Level. 8½- 11¼
Side.. 14⅛- 8½
Backing 11¼- 14⅛
Set bevel to last named.

Jack Rafter

Plumb 22½- 12
Level. 12 - 22½
Side.. 12¾- 6

Purlin Rafter Roof Sheathing

Plumb 11¼- 12¾
Cross. 6 - 12¾

Valley Shingles

Cross. 6 - 12¾
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 22½- 12
Mitre. 12¾- 6

Bisection of

22½- 12–14⅛- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 0¾	¼	¼
2	2. 1½	½	½
3	3. 2¼	¾	¾
4	4. 3	1	1⅛
5	5. 3¾	¼	⅜
6	6. 4½	½	⅝
7	7. 5¼	¾	⅞
8	8. 6	2	2⅛
9	9. 6¾	¼	⅜
10	10. 7½	½	⅝
11	11. 8¼	¾	⅞
12	12. 9	3	3¼
13	13. 9¾	¼	½
14	14. 10½	½	¾
15	15. 11¼	¾	4
16	17. 0	4	¼
17	18. 0¾	¼	½
18	19. 1½	½	¾
19	20. 2¼	¾	5
20	21. 3	5	⅜
21	22. 3¾	¼	⅝
22	23. 4½	½	⅞
23	24. 5¼	¾	6⅛
24	25. 6	6	⅜
25	26. 6¾	¼	⅝
26	27. 7½	½	⅞
27	28. 8¼	¾	7⅛
28	29. 9	7	⅜
29	30. 9¾	¼	¾
30	31. 10½	½	8
31	32. 11¼	¾	¼
32	34. 0	8	½
33	35. 0¾	¼	¾
34	36. 1½	½	9
35	37. 2¼	¾	¼
36	38. 3	9	⅝
37	39. 3¾	¼	⅞
38	40. 4½	½	10⅛
39	41. 5¼	¾	⅜
40	42. 6	10	⅝
41	43. 6¾	¼	⅞
42	44. 7½	½	11⅛
43	45. 8¼	¾	⅜
44	46. 9	11	⅝
45	47. 9¾	¼	12
46	48. 10½	½	¼
47	49. 11¼	¾	½
48	51. 0	12	¾
49	52. 0¾		
50	53. 1½		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 2⅛	¼	¼
2	2. 4⅛	½	⅝
3	3. 6¼	¾	⅞
4	4. 8⅜	1	1⅛
5	5. 10½	¼	½
6	7. 0½	½	¾
7	8. 2⅝	¾	2
8	9. 4¾	2	⅜
9	10. 6⅞	¼	⅝
10	11. 8⅞	½	⅞
11	12. 11	¾	3¼
12	14. 1⅛	3	½
13	15. 3⅛	¼	⅞
14	16. 5¼	½	4⅛
15	17. 7⅜	¾	⅜
16	18. 9½	4	¾
17	19. 11½	¼	5
18	21. 1⅝	½	¼
19	22. 3¾	¾	⅝
20	23. 5⅞	5	⅞
21	24. 7⅞	¼	6⅛
22	25. 10	½	½
23	27. 0⅛	¾	¾
24	28. 2¼	6	7
25	29. 4¼	¼	⅜
26	30. 6⅜	½	⅝
27	31. 8½	¾	⅞
28	32. 10½	7	8¼
29	34. 0⅝	¼	½
30	35. 2¾	½	¾
31	36. 4⅞	¾	9⅛
32	37. 6⅞	8	⅜
33	38. 9	¼	¾
34	39. 11⅛	½	10
35	41. 1¼	¾	¼
36	42. 3¼	9	⅝
37	43. 5⅜	¼	⅞
38	44. 7½	½	11⅛
39	45. 9½	¾	½
40	46. 11⅝	10	¾
41	48. 1¾	¼	12
42	49. 3⅞	½	⅜
43	50. 5⅞	¾	⅝
44	51. 8	11	⅞
45	52. 10⅛	¼	13¼
46	54. 0¼	½	½
47	55. 2¼	¾	¾
48	56. 4⅜	12	14⅛
49	57. 6½		
50	58. 8½		

JACK RAFTER Spaced In.	Length Ft.	In.
1..		2¼
2..		4⅜
3..		6½
4..		8⅝
5..		10¾
6..	1	1
7..		3⅛
8..		5¼
9..		7½
10..		9⅝
11..		11¾
12..	2	2
13..		4⅛
14..		6¼
15..		8⅜
16..		10⅝
17..	3	0¾
18..		2⅞
19..		5⅛
20..		7¼
21..		9⅜
22..		11½
23..	4	1¾
24..		3⅞
25..		6
26..		8¼
27..		10⅜
28..	5	0½
29..		2¾
30..		4⅞
31..		7
32..		9⅛
33..		11⅜
34..	6	1½
35..		3⅝
36..		5⅞
37..		8
38..		10⅛
39..	7	0¼
40..		2½
41..		4⅝
42..		6¾
43..		9
44..		11⅛
45..	8	1¼
46..		3½
47..		5⅝
48..		7¾

23 & 12—62½°

EXPLANATION

Common Rafter

Width of building..........33′2½″
Find length of Common Rafter.

Answer:

Under **Span**, ft. find 33′ = 35′ 8″
" " in. " 2½″ = 2¾″

Total length Common Rft. 35′10¾″

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50′, as 60′, add lengths of 50′ & 10′ spans together.

Hip Rafter

If common rafter span is 33′2½″, Hip rafter is 39′6⅝″ long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 22″ apart are 3′11½″ different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 23 - 12
Level. 12 - 23

Hip Rafter

Plumb 11½- 8½
Level. 8½- 11½
Side.. 14¼- 8½
Backing 11½- 14¼
Set bevel to last named.

Jack Rafter

Plumb 23 - 12
Level. 12 - 23
Side.. 13 - 6

Purlin Rafter Roof Sheathing

Plumb 11½- 13
Cross. 6 - 13

Valley Shingles

Cross. 6 - 13
Set level on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 23 - 12
Mitre. 13 - 6

Bisection of
23- 12=14⅜- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 1	¼	¼
2	2. 2	½	½
3	3. 2⅞	¾	¾
4	4. 3⅞	1	1⅛
5	5. 4⅞	¼	⅜
6	6. 5⅞	½	⅝
7	7. 6¾	¾	⅞
8	8. 7¾	2	2⅛
9	9. 8¾	¼	⅜
10	10. 9¾	½	¾
11	11. 10⅝	¾	3
12	12. 11⅝	3	¼
13	14. 0⅝	¼	½
14	15. 1⅝	½	¾
15	16. 2⅝	¾	4
16	17. 3½	4	⅜
17	18. 4½	¼	⅝
18	19. 5½	½	⅞
19	20. 6½	¾	5⅛
20	21. 7⅜	5	⅜
21	22. 8⅜	¼	⅝
22	23. 9⅜	½	⅞
23	24. 10⅜	¾	6¼
24	25. 11¼	6	½
25	27. 0¼	¼	¾
26	28. 1¼	½	7
27	29. 2¼	¾	¼
28	30. 3¼	7	⅝
29	31. 4⅛	¼	⅞
30	32. 5⅛	½	8⅛
31	33. 6⅛	¾	⅜
32	34. 7⅛	8	⅝
33	35. 8	¼	⅞
34	36. 9	½	9⅛
35	37. 10	¾	½
36	38. 11	9	¾
37	39. 11⅞	¼	10
38	41. 0⅞	½	¼
39	42. 1⅞	¾	½
40	43. 2⅞	10	¾
41	44. 3¾	¼	11⅛
42	45. 4¾	½	⅜
43	46. 5¾	¾	⅝
44	47. 6¾	11	⅞
45	48. 7¾	¼	12⅛
46	49. 8⅝	½	⅜
47	50. 9⅝	¾	¾
48	51. 10⅝	12	13
49	52. 11⅝		
50	54. 0½		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth In.
1	1. 2¼	¼	¼
2	2. 4⅝	½	⅝
3	3. 6⅞	¾	⅞
4	4. 9⅛	1	1¼
5	5. 11½	¼	½
6	7. 1¾	½	¾
7	8. 4	¾	2⅛
8	9. 6⅜	2	⅜
9	10. 8⅝	¼	⅝
10	11. 10⅞	½	3
11	13. 1¼	¾	¼
12	14. 3½	3	⅝
13	15. 5¾	¼	⅞
14	16. 8⅛	½	4⅛
15	17. 10⅜	¾	½
16	19. 0⅝	4	¾
17	20. 3	¼	5⅛
18	21. 5¼	½	⅜
19	22. 7½	¾	⅝
20	23. 9⅞	5	6
21	25. 0⅛	¼	¼
22	26. 2⅜	½	½
23	27. 4¾	¾	⅞
24	28. 7	6	7⅛
25	29. 9¼	¼	½
26	30. 11⅝	½	¾
27	32. 1⅞	¾	8
28	33. 4⅛	7	⅜
29	34. 6½	¼	⅝
30	35. 8¾	½	⅞
31	36. 11	¾	9¼
32	38. 1⅜	8	½
33	39. 3⅝	¼	⅞
34	40. 5⅞	½	10⅛
35	41. 8¼	¾	⅜
36	42. 10½	9	¾
37	44. 0¾	¼	11
38	45. 3⅛	½	⅜
39	46. 5⅜	¾	⅝
40	47. 7⅝	10	12
41	48. 10	¼	¼
42	50. 0¼	½	½
43	51. 2½	¾	¾
44	52. 4⅞	11	13⅛
45	53. 7⅛	¼	⅜
46	54. 9⅜	½	⅝
47	55. 11¾	¾	14
48	57. 2	12	¼
49	58. 4¼		
50	59. 6⅝		

JACK RAFTER

Spaced	Length	
In.	Ft.	In.
1..		2¼
2..		4⅜
3..		6⅝
4..		8¾
5..		11
6..	1	1¼
7..		3⅜
8..		5⅝
9..		7¾
10..		10
11..	2	0⅛
12..		2⅜
13..		4⅝
14..		6¾
15..		9
16..		11⅛
17..	3	1⅜
18..		3⅝
19..		5¾
20..		8
21..		10⅛
22..	4	0⅜
23..		2⅝
24..		4¾
25..		7
26..		9⅛
27..		11⅜
28	5..	1⅝
29..		3¾
30..		6
31	...	8⅛
32..		10⅜
33..	6	0½
34..		2¾
35..		5
36..		7⅛
37..		9⅜
38..		11½
39..	7	1¾
40..		4
41..		6⅛
42..		8⅜
43..		10½
44..	8	0¾
45..		3
46..		5⅛
47..		7⅜
48..		9½

23½ & 12—63°

EXPLANATION

Common Rafter

Width of building..........36'2½"
Find length of Common Rafter.
Answer:
Under **Span, ft.** find 36' = 39' 7"
" " **in.** " 2½" = 2¾"

Total length Common Rft. 39' 9¾"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. **Allow for half thickness of ridge.**

Spans over 50', as 60', **add lengths** of 50' & 10' spans together.

Hip Rafter

If common rafter span is 36'2½", Hip rafter is 43'8¾" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled), see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 26" part are 4'9⅛" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 23½- 12
Level. 12 - 23½

Hip Rafter

Plumb 11¾- 8½
Level. 8½- 11¾
Side.. 14½- 8½
Backing 11¾- 14½
Set bevel to last named.

Jack Rafter

Plumb 23½- 12
Level. 12 - 23½
Side.. 13¼- 6

Purlin Rafter Roof Sheathing

Plumb 11¾- 13¼
Cross. 6 - 13¼

Valley Shingles

Cross. 6 - 13¼
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 23½- 12
Mitre. 13¼- 6

Bisection of
23½- 12=14½- 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 1¼	¼	¼
2	2. 2⅜	½	½
3	3. 3⅝	¾	⅞
4	4. 4¾	1	1⅛
5	5. 6	¼	⅜
6	6. 7⅛	½	⅝
7	7. 8⅜	¾	⅞
8	8. 9½	2	2¼
9	9. 10¾	¼	½
10	10. 11⅞	½	¾
11	12. 1⅛	¾	3
12	13. 2⅜	3	¼
13	14. 3½	¼	⅝
14	15. 4¾	½	⅞
15	16. 5⅞	¾	4⅛
16	17. 7	4	⅜
17	18. 8¼	¼	⅝
18	19. 9½	½	5
19	20. 10⅝	¾	¼
20	21. 11⅞	5	½
21	23. 1	¼	¾
22	24. 2¼	½	6
23	25. 3½	¾	⅜
24	26. 4⅝	6	⅝
25	27. 5⅞	¼	⅞
26	28. 7	½	7⅛
27	29. 8¼	¾	⅜
28	30. 9⅜	7	⅝
29	31. 10⅝	¼	8
30	32. 11¾	½	¼
31	34. 1	¾	½
32	35. 2⅛	8	¾
33	36. 3⅜	¼	9⅛
34	37. 4⅝	½	⅜
35	38. 5¾	¾	⅝
36	39. 7	9	⅞
37	40. 8⅛	¼	10⅛
38	41. 9⅜	½	½
39	42. 10½	¾	¾
40	43. 11¾	10	11
41	45. 0⅞	¼	¼
42	46. 2⅛	½	½
43	47. 3¼	¾	⅞
44	48. 4½	11	12⅛
45	49. 5¾	¼	⅜
46	50. 6⅞	½	⅝
47	51. 8⅛	¾	⅞
48	52. 9¼	12	13⅛
49	53. 10½		
50	54. 11⅝		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 2½	¼	⅜
2	2. 5	½	⅝
3	3. 7½	¾	⅞
4	4. 10	1	1¼
5	6. 0½	¼	½
6	7. 3	½	⅞
7	8. 5½	¾	2⅛
8	9. 8	2	⅜
9	10. 10½	¼	¾
10	12. 0⅞	½	3
11	13. 3⅜	¾	⅜
12	14. 5⅞	3	⅝
13	15. 8⅜	¼	⅞
14	16. 10⅞	½	4¼
15	18. 1⅜	¾	½
16	19. 3⅞	4	⅞
17	20. 6⅜	¼	5⅛
18	21. 8⅞	½	⅜
19	22. 11⅜	¾	¾
20	24. 1⅞	5	6
21	25. 4⅜	¼	⅜
22	26. 6⅞	½	⅝
23	27. 9⅜	¾	7
24	28. 11⅞	6	¼
25	30. 2⅜	¼	½
26	31. 4⅞	½	⅞
27	32. 7⅜	¾	8⅛
28	33. 9⅞	7	½
29	35. 0¼	¼	¾
30	36. 2¾	½	9
31	37. 5¼	¾	⅜
32	38. 7¾	8	⅝
33	39. 10¼	¼	10
34	41. 0¾	½	¼
35	42. 3¼	¾	⅝
36	43. 5¾	9	⅞
37	44. 8¼	¼	11⅛
38	45. 10¾	½	½
39	47. 1¼	¾	¾
40	48. 3¾	10	12⅛
41	49. 6¼	¼	⅜
42	50. 8¾	½	⅝
43	51. 11¼	¾	13
44	53. 1¾	11	¼
45	54. 4¼	¼	⅝
46	55. 6¾	½	⅞
47	56. 9¼	¾	14¼
48	57. 11¾	12	½
49	59. 2⅛		
50	60. 4⅝		

JACK RAFTER

Spaced In.	Length Ft.	In.
1..		2¼
2..		4½
3..		6¾
4..		9
5..		11⅛
6..	1	1⅜
7..		3⅝
8..		5⅞
9..		8⅛
10..		10⅜
11..	2	0⅝
12..		2⅞
13..		5⅛
14..		7¼
15..		9½
16..		11¾
17..	3	2
18..		4¼
19..		6½
20..		8¾
21..		11
22..	4	1¼
23..		3⅜
24..		5⅝
25..		7⅞
26..		10⅛
27..	5	0⅜
28..		2⅝
29..		4⅞
30..		7⅛
31..		9⅜
32..		11½
33..	6	1¾
34..		4
35..		6¼
36..		8½
37..		10¾
38..	7	1
39..		3¼
40..		5½
41..		7⅝
42..		9⅞
43..	8	0⅛
44..		2⅜
45..		4⅝
46..		6⅞
47..		9¼
48..		11⅜

24 & 12 — 63½°

EXPLANATION

Common Rafter

Width of building...........46'4½"
Find length of Common Rafter.

Answer:

Under **Span, ft.** find 46' = 51' 5⅛"
" " **in.** " 4½" = 5"

Total length Common Rft. 51'10⅛"

When rafters overhang, add both overhangs to width of building. Use total span as before.

To get length of rafter by its run: doubling the run gives the span. Proceed as before.

Tables give full length. Allow for half thickness of ridge.

Spans over 50', as 60', add lengths of 50' & 10' spans together.

Hip Rafter

If common rafter span is 46'4½", Hip rafter is 56'9½" long. Measure length of Hip on center of top edge. If Hip is unbacked (top edge square), see Index. If edge is backed (beveled) see Index.

Allow for half thickness of ridge.

Jack Rafters

Spaced 24" apart are 4'5⅝" different in length. Measure length on center of top edge. Cut short equal to half thickness of hip.

CUTS FOR STEEL SQUARE.

The first figure is always the cut.

Common Rafter

Plumb 24 - 12
Level. 12 - 24

Hip Rafter

Plumb 12 - 8½
Level. 8½ - 12
Side.. 14¾ - 8½
Backing 12 - 14¾
Set bevel to last named.

Jack Rafter

Plumb 24 - 12
Level. 12 - 24
Side.. 13⅜ - 6

Purlin Rafter
Roof Sheathing

Plumb 12 - 13⅜
Cross. 6 - 13⅜

Valley Shingles

Cross. 6 - 13⅜
Set bevel on butt end.

Mitre-Box Cuts for Gable Moulds

Plumb 24 - 12
Mitre. 13⅜ - 6

Bisection of

24 - 12=14⅝ - 24

For full explanation see Index.

COMMON RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth. In.
1	1. 1⅜	¼	¼
2	2. 2⅞	½	⅝
3	3. 4¼	¾	⅞
4	4. 5⅝	1	1⅛
5	5. 7⅛	¼	⅜
6	6. 8½	½	⅝
7	7. 9⅞	¾	2
8	8. 11⅜	2	¼
9	10. 0¾	¼	½
10	11. 2⅛	½	¾
11	12. 3⅝	¾	3⅛
12	13. 5	3	⅜
13	14. 6⅜	¼	⅝
14	15. 7⅞	½	⅞
15	16. 9¼	¾	4¼
16	17. 10⅝	4	½
17	19. 0⅛	¼	¾
18	20. 1½	½	5
19	21. 2⅞	¾	¼
20	22. 4⅜	5	⅝
21	23. 5¾	¼	⅞
22	24. 7⅛	½	6⅛
23	25. 8⅝	¾	⅜
24	26. 10	6	¾
25	27. 11⅜	¼	7
26	29. 0⅞	½	¼
27	30. 2¼	¾	½
28	31. 3⅝	7	⅞
29	32. 5⅛	¼	8⅛
30	33. 6½	½	⅜
31	34. 7⅞	¾	⅝
32	35. 9⅜	8	9
33	36. 10¾	¼	¼
34	38. 0⅛	½	½
35	39. 1⅝	¾	¾
36	40. 3	9	10
37	41. 4⅜	¼	⅜
38	42. 5⅞	½	⅝
39	43. 7¼	¾	⅞
40	44. 8⅝	10	11⅛
41	45. 10⅛	¼	½
42	46. 11½	½	¾
43	48. 0⅞	¾	12
44	49. 2⅜	11	¼
45	50. 3¾	¼	⅝
46	51. 5⅛	½	⅞
47	52. 6⅝	¾	13⅛
48	53. 8	12	⅜
49	54. 9⅜		
50	55. 10⅞		

HIP OR VALLEY RAFTER

Span Ft.	Length Ft. In.	Span In.	Lgth In
1	1. 2¾	¼	¼
2	2. 5⅜	½	⅝
3	3. 8⅛	¾	⅞
4	4. 10¾	1	1¼
5	6. 1½	¼	½
6	7. 4⅛	½	⅞
7	8. 6⅞	¾	2⅛
8	9. 9⅝	2	½
9	11. 0¼	¼	¾
10	12. 3	½	3⅛
11	13. 5⅝	¾	⅜
12	14. 8⅜	3	⅝
13	15. 11	¼	4
14	17. 1¾	½	¼
15	18. 4½	¾	⅝
16	19. 7⅛	4	⅞
17	20. 9⅞	¼	5¼
18	22. 0½	½	½
19	23. 3¼	¾	⅞
20	24. 6	5	6⅛
21	25. 8⅝	¼	⅜
22	26. 11⅜	½	¾
23	28. 2	¾	7
24	29. 4¾	6	⅜
25	30. 7⅜	¼	⅝
26	31. 10⅛	½	8
27	33. 0⅞	¾	¼
28	34. 3½	7	⅝
29	35. 6¼	¼	⅞
30	36. 8⅞	½	9⅛
31	37. 11⅝	¾	½
32	39. 2¼	8	¾
33	40. 5	¼	10⅛
34	41. 7¾	½	⅜
35	42. 10⅜	¾	¾
36	44. 1⅛	9	11
37	45. 3¾	¼	⅜
38	46. 6½	½	⅝
39	47. 9⅛	¾	12
40	48. 11⅞	10	¼
41	50. 2⅝	¼	½
42	51. 5¼	½	⅞
43	52. 8	¾	13⅛
44	53. 10⅝	11	½
45	55. 1⅜	¼	¾
46	56. 4	½	14⅛
47	57. 6¾	¾	⅜
48	58. 9½	12	⅝
49	60. 0⅛		
50	61. 2⅞		

PROBLEMS TO BE SOLVED WITH THE "FULL LENGTH ROOF FRAMER"

Examine the book for a few minutes and read pages 7 to 14 and then solve these problems. The answers are at the end.

Practice writing down problems of your own and see how quickly you can solve them.

Roof framing is the most fascinating and interesting part of a building as well as the most difficult. An expert roof framer is always looked upon with great respect by his employer and fellow mechanic.

The three objects in writing this book were to have it *simple, unquestionably accurate* and as *brief* and *small* as possible for *pocket size.*

The pitch of a roof is printed on the building plans as so many inches of rise to 12″ of run. The 12″ of run is standard and is always used, as 6″ and 12″, meaning 6″ of rise to 12″ of run. Also 6½ and 12, 7 and 12, 7½ and 12, 8 and 12 and so on from ½ and 12 up to 24 and 12. The plan might call for any of these 48 different pitches and the mechanic must be prepared to frame any roof at short notice.

PROBLEM ONE

A building is 33′ 7¾″ wide. The pitch is 7½ and 12. It is a gable roof and has neither Hip, Valley or Jack rafters. Find the length and cuts for the Common rafters. (Pages 7 and 48.)

PROBLEM TWO

A building is 29′ 9¼″ wide. The pitch is 9½ and 12. The rafters project or overhang 1′ 11″ on each side of the building line (measuring out level).

This is another gable roof with only Common rafters. Find the location of the seat cut (pages 9 and 56) and then the entire length (page 56).

PROBLEM THREE

A building is 31′ 5¼″ wide. The pitch is 17½ and 12. The rafters overhang 2′ 1″ (measuring out level). This building is "L" shaped and has Hip, Valley and Jack rafters, as well as Common rafters. The Jack rafters are spaced 28″ apart. Find the location of the seat cut of the Common, Hip and Valley rafters (pages 9 and 88) and then the entire lengths (page 88).

PROBLEM FOUR

A porch projects 9′ 6″ from the main building. It is to be covered with a 6½ and 12 lean-to or half span roof which rests against the side of the main building (page 11). The porch rafters overhang 24″. There are hip rafters on the porch corners. Find the location of the seat cut of the Hip and Common rafters (pages 11 and 44). Then find the entire lengths (page 44). The Jack rafters are spaced 24″ apart.

ANSWERS TO THE ABOVE PROBLEMS

PROBLEM ONE

Common rafter length	19′	10⅛″

PROBLEM TWO

Common rafter to seat cut	18′	11¾″
Common rafter length	21′	5⅛″

PROBLEM THREE

Common rafter to seat cut	27′	9½″
Common rafter length	31′	5¾″
Hip and Valley to seat cut	31′	11¼″
Hip and Valley length	36′	2″
Jack rafter length	4′	1½″

Jack rafter seat cut same as for Common rafter.

PROBLEM FOUR

Common rafter seat cut	10′	9⅝″
Common rafter length	13′	1″
Hip and Valley seat cut	14′	4⅝″
Hip and Valley length	17′	5″
Jack rafter length	2′	3¼″

Jack rafter seat cut same as for Common rafter.

JACK RAFTER AGAINST HIP

Amount cut off the length of Jack. Half thickness of Hip. See pp. 10, 13. Figs. 9, 15, 20. Jack is 2′4⅞″ long. Pitch is 8″ rise and 12″ run. Hip is 1⅝. See table below. Column one. Rise 8. Col. 2, Hip 1⅝ thick. Allowance in Col. 2 is 1⅜″. The Jack is now 2′3½″ long. From dotted line, Figs. 9, 15.

HIP RAFTER AGAINST RIDGE

Amount cut off the length of Hip. Half thickness of Ridge. See pp. 13, 18. Figures 15, 37. The Hip is 16′5″. Pitch is 8 rise to 12″ run. Ridge is 1⅝. See table below. Column one. Rise 8″ and in Col. 5 is 1¼″, the amount to reduce length. The Hip is now 16′3¾″ long. The Valley is also 16′3¾″. Dotted line Figs. 15, 37, 38.

JACKS against Hip			HIPS against Ridge		
	Thickness		**Thickness**		
Rise	**1⅝″**	**1⅞″**	**¾″**	**1⅝″**	**1⅞″**
2	1⅛	1⅜	½	1⅛	1⅜
4	1¼	1⅜	½	1⅛	1⅜
6	1¼	1½	½	1¼	1⅜
8	1⅜	1⅝	⅝	1¼	1½
10	1½	1¾	⅝	1⅜	1½
12	1⅝	1⅞	⅝	1⅜	1⅝
14	1¾	2	¾	1½	1⅝
16	1⅞	2¼	¾	1⅝	1¾

COMMON RAFTER AGAINST RIDGE

See page 13, Fig. 11. At dotted line is length taken from tables. The cutoff is half the thickness of your ridge.